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ORIGINAL ARTICLES.

THE PREVENTION OF SHOCK DURING AND AFTER OPERATIONS.

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AT the meeting of the American Surgical Association at Washington, in 1888, one of the subjects of discussion was the prevention of shock during and after operations. It appears that, notwithstanding the great improvements in the treatment of wounds, the mortality from operations, due to primary and secondary shock, has not diminished, if, indeed, it has not increased. Failure of operations, due to shock, was attributed to prolonged procedures, nausea from the anæsthetics, and to the chilling dressings now applied. In a word, it was stated that pain and bleeding are less frequent; that slow cutting, nausea, exposure, and low temperature are more frequent; that primary shock has diminished, but that secondary shock has increased.

The truth of these statements is a matter of every-day observation. Rapidity of operation was a cardinal feature of the reputation of operators before the days of anæsthetics. The chief concern of the operator was to lessen the period of pain. Every detail of the procedure was carefully arranged with a view to celerity of execution. But it is evident that precision was then sacrificed to rapidity, and many operations failed to attain their ultimate objects owing to imperfections in the management of details. When, however, anæsthetics removed pain as an element in operations, the attention of surgeons was directed to precision in details, and with very happy results. Not only were the immediate and ultimate results of operations greatly improved, but the range of operations was immensely increased. These advantages were gained, however, only at the expense of prolonged anæsthesia, necessitated by the more complicated procedures and by the greater attention to all the steps of the operation. It follows that, notwithstanding the vast improvements in the details of operations, we are still confronted with shock as an even more fatal complication than formerly.

The preventive measures proposed in the discussion at Washington were simply such as every prudent surgeon adopts, viz., wait for reaction; calm the patient by a cheerful word; give stimulants before the anæsthetic; make anæsthesia short; operate as rapidly as practicable; dress quickly; avoid chilling the patient. After the operation apply dry heat; give liquid nourishment, with stimulants and laudanum, by the rectum; inject brandy subcutaneously; by the mouth give aromatic spirit of ammonia, and also black coffee and brandy; secure quiet, a horizontal position, and sleep; assure the patient that all is over and doing well. But in spite of all of these precautions it was alleged that secondary shock is very liable to occur and prove fatal.

Long since, impressed with the dangers of shock in many modern operations, owing to the long continuance of the anæsthesia, the liability to chilling and to depression from the loss of blood, I have been accustomed, where time will permit, to prepare patients for operations by stimulation to the extent of semi-intoxication. The results have been most happy, especially with feeble patients whose condition has rendered the propriety of an operation very doubtful. The course which I pursue is to give the stimulant in hot milk, beginning from *eight to ten* hours before the operation. Such quantities are given, and so frequently, as to secure a state of happy indifference to the operation on the part of the patient. If the operation is to be at three o'clock in the afternoon, I give directions to commence at six or eight o'clock in the morning. I prefer whiskey to brandy, owing to its slow and persistent operation over a much longer period.

If the patient is not accustomed to the habitual use of stimulants I order an ounce of whiskey every two hours in half a pint of hot milk. If at twelve o'clock, or even at ten, sufficient progress has not been made to render it quite certain that semi-intoxication will be secured at the appointed time, I give an ounce of whiskey in milk every hour during the remaining time. When the requisite effect has been obtained the stimulation should be discontinued. In the case of habitual drinkers I have given two ounces every hour. It is important to give the stimulant in hot milk, which will furnish a large supply of easily-digested and readily-assimilated food, in a form most useful to sustain the vital energies during the critical period of a severe operation, or during a necessarily-protracted operation.

The patient thus prepared has suffused eyes, a flushed skin, a slow full pulse, and complete indifference to the operation, though perhaps previously extremely timid. Frequently he jests and sings

when taken to the operating-table. He is warmly covered except on the part to be exposed for the operation. The assistant who administers the anæsthetic is directed to suspend it as frequently as possible. It will be a matter of surprise to anyone who first administers an anæsthetic to a person partially, or quite, intoxicated by the foregoing means, to observe how quickly, and without a struggle, the patient comes fully under its influence, and how small the quantity required. The pulse remains at its normal standard throughout the operation, the breathing is quiet and regular, the skin continues warm and red, and without unusual perspiration.

During the twenty-four to forty-eight hours subsequent to the operation the condition of the patient remains good. The pulse continues full, the skin natural, the respiration undisturbed, and the mental state is that of indifference, or hopefulness. Neither primary nor secondary shock occurs under such circumstances.

To prevent chilling, the patient should not only be protected by warm clothing, but the wound should be douched with hot water containing the disinfectant. The exact temperature of the water is a matter of much importance, as the term "hot" is indefinite and misleading. In the haste of an operation the hand is often employed to determine the temperature of the water. This test varies somewhat with different individuals, as one person will shrink from placing his hand in water at a temperature which another may bear with little inconvenience. I have frequently tested the temperature of water in which an assistant could thrust his hand, though compelled to withdraw it instantly. This temperature does not exceed 150° F., but more often is 145° F. The hand I regard as a sufficiently good test for a temperature of 145° F. to 150° F. Nor should I care to apply water at a higher temperature than 150° F. to the wound. The late Dr. Varick, of Jersey City, who urged the use of hot water, advocated using water "slightly" below the boiling-point on operation wounds. Water at that temperature would, however, be destructive to tissues, for in my experience water at a temperature of 150° F. will destroy living tissues if it is allowed to remain in contact with them. It can be used at this temperature as a douche only—that is, it must be dashed on the wound. When applied to a fresh wound the surface should be rendered of a dull-gray color. The patient is usually instantly aroused by the heat. The best method of applying the water is by pouring from a pitcher, but not continuously; it should rather be dashed into the wound so that it will penetrate every recess. The effect of the hot water is also seen in the arrest of all oozing of blood from the wound, and this arrest of hæmorrhage is permanent, and prevents secondary bleeding. The application of the dressings immediately follows, and as these consist of materials retentive of heat, there can be no chilling of the patient by the dressings.

During the past ten years I have pursued the above method of preventing shock, and in no instance has that complication occurred.

FEMORAL PHLEBITIS IN TYPHOID FEVER.

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IN the following report of cases of femoral phlebitis complicating typhoid fever, the term phlebitis is used in a clinical rather than in a strictly pathological sense. Cruveilhier and other pathologists of his time, as well as later pathologists, regarded the presence of coagula in veins as proof of the existence of phlebitis; but the investigations of Virchow conclusively showed that arterial and venous obstruction may be brought about by embolism and thrombosis independently of inflammatory change in the vessels. In fact, the changes in the walls of the vessels wrought by inflammation, such as roughening and thickening, which were thought to be especially causative of coagula, may, it is known, exist to a very great extent without producing any such obstructions. It is, for example, not uncommon to find the intima of the aorta and other vessels excessively roughened even by extensive calcification, without the occurrence of clotting.

Into the minute pathology of this subject, which is still under discussion and needs much elucidation, I do not now propose to enter. My object is to call attention to a particular form of venous obstruction that occurs as a complication of typhoid fever, and which cannot be regarded as very uncommon, and yet relatively to many other complications of this disease is perhaps infrequent. The seat of the obstruction in the cases referred to is the femoral vein. The thrombus occasioning it is termed *marantic* or *marasmatic*, and in accordance with the meaning of this term it is believed by some to be due to feebleness of the circulation resulting from heart-weakness and consequent retardation of the blood-current. Whether such slowing and enfeebling of the circulation are of themselves sufficient to produce the thrombus, is, I think, at least open to question. What share the accumulation of blood-plaques or hæmatoblasts may have in its production, as they have been shown to have in the case of other thrombi, has not yet been clearly shown.

In THE MEDICAL NEWS of September 7, 1889, three cases of femoral phlebitis complicating typhoid fever are reported as occurring in the clinic of Professor J. M. DaCosta. All of the cases were in men between twenty and thirty years of age. In all of

them the phlebitis was first observed in the third week of the disease; in all the affection was in the left leg and thigh; and in all recovery took place. In this report it is mentioned as a curious fact, of which no accurate explanation has yet been given, that as a rule the left leg is the one involved in the trouble. It is further remarked that as nearly all cases recover, the pathology is difficult to get at. But the result is not always as favorable as in Dr. DaCosta's three cases; for Dr. Austin Flint, Sr., mentions a case in which sudden death occurred in typhoid fever from an embolus being detached from the thrombus and occluding the pulmonary artery,[1] and of course the possibility of such a result exists in every case. Liebermeister reports thirty-one cases of this complication with two deaths; and Murchison seventeen cases with three deaths, which, however, he thinks were not attributable to the complicating phlebitis alone.

The course of typhoid fever is indeed traversed by so many "downward slopes to death;" its fatal termination may occur in so many ways—as cardiac failure from high temperature; cardiac failure from muscular degeneration or exhausting diarrhœa; intestinal hæmorrhage; perforation; hypostatic pneumonia; or brain-lesion—that a person may readily die *with* femoral obstruction, and yet not *from* it.

I have said that this complication is absolutely not very uncommon. In addition to the writers already referred to, it is mentioned by Christison, who states that several examples of it occurred in Edinburgh between 1817 and 1820.[2] He remarks that it resembles the phlegmasia dolens of puerperal women, and says that it was first described by Dr. Tweedie, in 1828, as an occasional sequel of continued fever in the London Fever Hospital.

Strümpel speaks of swelling of one of the lower limbs, caused by venous thrombosis due to cardiac weakness, as sometimes occurring during convalescence from typhoid fever, but as happening in other cases too early to be attributable to weakness of the heart, and therefore due to some local specific cause.[3]

Hutchinson refers to it as resulting from heart-weakness, and states that he has seen both femoral veins obstructed at the same time.[4] None of these writers, however, except Professor DaCosta, as above quoted, refers to its special occurrence on the left side.

On the other hand, I have said that in comparison with many other complications of the disease, this one may be regarded as infrequent, and this statement is borne out by the fact that there is no mention of its occurrence in that storehouse of pathological facts, Cruveilhier's *Pathological Anatomy;* in Harley's very elaborate and learned article on typhoid fever in *Reynolds's System of Medicine;* in the lectures of Sir Thomas Watson; in Professor Loomis's *Text-book of Practical Medicine;* in Professor Bartholow's *Treatise on Practice;* nor in the writings of the late Professor George B. Wood.

In a considerable experience with typhoid fever derived from a practice of many years, I have never chanced to meet this complication among the cases which I have attended primarily, but I have witnessed it in four cases which I was called to see in consultation with professional friends, and the case occurring in the practice of each of these individual physicians was, I believe, the only one that he had ever encountered.

CASE I.—The first instance of this affection that I saw occurred in a married man about twenty-eight years of age, whom I was asked to visit in consultation by Dr. Charles H. Riley, in December, 1883. This patient, during the second and third weeks of his attack of typhoid fever, had been as near to death from cardiac exhaustion as I have ever known one to be who ultimately recovered. After convalescence was fairly established he was suddenly attacked with pain in his left thigh along the course of the femoral vessels and running down to the leg, which rapidly reached the degree of intense agony. The vein could be felt as a hard, corded line, and the whole limb became swollen and presented the tense and shining appearance that is seen in phlegmasia dolens. As the temperature of the limb, especially in its distal part, was somewhat lowered, it was kept enveloped in cotton-batting, and the pain was controlled as far as possible by hypodermic injections of morphine. In the course of a few days this pain subsided so that the morphine could be omitted. The swelling of the limb gradually lessened, and the case terminated in perfect recovery.

CASE II.—This occurred in September, 1884, in the practice of Dr. James Bosley, who requested me to see the patient. The patient was a married man about thirty-five years old, and was in the third week of typhoid fever, when he developed a condition of the left thigh and leg resembling that in Case I., except that the pain, while severe, was of less agonizing intensity. The œdema and the corded condition along the limb were as marked as in Case I. The treatment was the same, and the patient slowly recovered.

CASE III.—This case I saw in June, 1888, in Bel Air, Maryland, in consultation with Dr. B. H. Richardson. There were four cases of typhoid fever in the family, three out of the four being of great severity, and one nearly proving fatal from excessive intestinal hæmorrhage. Another one of the three, a girl seventeen years of age, showed very grave symptoms from an early period of the disease. In the fourth week the left thigh and leg became swollen and painful. The pain was much increased by pressure, but was not severe enough to demand

[1] Practice of Medicine, sixth edition, p. 963.
[2] Library of Practical Medicine, vol. i. p. 198.
[3] Text-book, p. 15, American edition.
[4] Pepper's System of Medicine, vol. i. p. 294.

morphine. The cord-like hardness along the femoral vessels was especially marked. The symptoms gradually abated and recovery ultimately took place.

CASE IV.—In August, 1888, I saw a fourth case of this kind in consultation with Dr. Tall, of Baltimore. The patient was a young married woman who had nearly passed through a well-marked, but not very severe, attack of typhoid fever, and had entered upon convalescence, when the same symptoms as those described in the preceding cases occurred in the left thigh and leg. The pain in this case was not violent, but the swelling of the limb and the hardness along the course of the vessels were very great. The subsidence of the symptoms was, however, rapid, no treatment being used except enveloping the limb in cotton-batting.

Four cases of this somewhat unusual complication of typhoid fever have now been described, two being male and two female subjects, so that as far as this number of cases indicates, no sexual proclivity is shown. In all, the left lower limb was affected, and all ended in recovery.

Whether there is any special anatomical explanation of the selection of the left limb I am unable to say. The left common iliac vein is, it is true, somewhat longer and more oblique in its course than the right, but the difference is hardly sufficient to account for the fact that the left femoral vein is so much more frequently affected by a condition from which its fellow altogether escapes.

Again, our Anatomies teach us that in some cases the left common iliac vein, instead of joining the right one in the usual position between the fourth and fifth lumbar vertebræ, ascends on the left side of the aorta as high as the kidney, where, after receiving the left renal vein, it crosses the aorta to join the right iliac. Whether this unusual length and tortuous course of a vessel having no valves may account for the occurrence of the obstruction in conditions of great weakness of the circulation, such as exists in typhoid fever, is a conjecture that may be hazarded; but the explanation could be established only by finding the unusual course in a post-mortem examination of a case in which the complication had occurred. Opportunities for such examinations are seldom presented, and I know of no record of any having been made. Some more probable reason for the complication may exist, but at present I can only look upon it, as Professor Da Costa does, as a curious fact of which no accurate explanation has been given.

EMPYÆMA, WITH REPORTS OF CASES, INCLUDING A CASE OF DOUBLE EMPYÆMA.

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THE following brief histories of a few cases of empyæma are presented not as examples of any new plan of treatment, but simply as additional experience with what are now probably regarded as the best methods of treating a condition which is interesting alike to the physician and to the surgeon.

The subject is one upon which much has been written, and the attention thus called to it has, no doubt, stimulated a greater accuracy of observation, whereby fewer cases of the disease than formerly are overlooked. The discussions and recorded experience of the last few years have, I believe, also done much to improve the methods of treatment. The changes and improvements which have thus been made are epitomized in the two ideas of simplicity and cleanliness.

At the present time I think it may be laid down as an axiom that the presence of pus in the pleural cavity, be it in child or adult, is an indication for incision and free drainage. Cases undoubtedly do recover without operation by spontaneous absorption, by absorption after one or many aspirations, by rupture into the lung and discharge through a bronchus, or by rupture externally through an intercostal space. But the recovery under these circumstances is slow; the patient becomes emaciated, anæmic, and weak, pleural adhesions may render subsequent expansion of the lung difficult or impossible, or the occasional residual products of spontaneous absorption may form a focus for a renewal of suppuration.

The subject of diagnosis may be briefly referred to. The physical signs of a pleural effusion are well known, and if the effusion is large the signs are unequivocal—absolute dulness with displacement of the mediastinum, a sensation of resistance to the percussing finger, a short, wooden percussion-note, and fulness or bulging of the intercostal spaces. The differential diagnosis between purulent and serous effusions is well stated by Money in his book on children's diseases, as follows: "The signs that tell for empyæma as against serous effusion are emaciation, anæmia, long duration, with sweating, fever, clubbing of the fingers, œdema of the affected side, with extra heat of the skin there and enlargement of the veins." An early diagnosis, however, and a *positive* diagnosis at any time, is best made by means of a hypodermic syringe with a large needle, though even the evidence thus obtained is not always absolutely unimpeachable. In a doubtful case I should advise repeated punctures, and, in children that are not easily controlled, puncture under the influence of an anæsthetic. In this sort of exploration let it not be forgotten that skin, needle, syringe, and hands should be *absolutely* clean.

CASE I.—Otto O., aged four and one-half years, operated on, June 4, 1888. He had been in my care for the four weeks immediately preceding this, for what I considered as left-sided catarrhal pneumonia. He had passed through the acuter stages

of the trouble, the fever had abated, and there were signs of improvement. My visits and examinations had become less frequent. The improvement, however, was slow, some fever, poor appetite, etc., persisting. In the latter part of this period of four weeks, examinations of the chest were not made so frequently as they should have been, and pleurisy had not been thought of. Finally an examination showed that the chest was enlarged, distended, and dull almost to the clavicle. An exploration with a hypodermic needle made the presence of pus positive, and a quart was withdrawn by aspiration. Two days later a pint was drawn off in the same manner. Two days after this an incision was made between the sixth and seventh ribs in the axillary line, two rubber drainage-tubes were inserted, one long, the other short, and the cavity was freely washed with Thiersch's solution. The chest was washed out at each of the five or six subsequent dressings, at intervals of from two to four days. The dressing consisted of a mass of aseptic gauze, rubber tissue, cotton, and bandage. The long tube was gradually shortened. One tube was removed on the nineteenth day after operation, the remaining tube on the twenty-fifth day, after which the wound quickly and completely healed. The patient is now well and has been since the cicatrization of the wound.

CASE II.—Mamie S., aged seven years. First seen, May 27, 1889. Diagnosis, pleurisy of left side with circumscribed pneumonia. On June 8th, puncture with a hypodermic needle revealed pus.

Operation, June 11th: Free incision and drainage as in Case I., irrigation of the pleura with iodine water. No irrigation at subsequent dressings. Tube finally removed, July 3d. Recovery was prompt and the patient is now in good health. In this case a diagnosis was made early, and the early operation prevented the accumulation of any large amount of pus. About four ounces were removed at the time of the incision.

CASE III.—Mrs. S., aged thirty-six years, was operated upon in November, 1888. Two years before this the patient began to poultice the lower part of the left thorax, on account of pain which had existed in a greater or less degree since an attack of pneumonia some four or five months previously. Very soon a fistula formed, and continued to discharge pus. During this time the patient had been in poor health, and at the time of my first examination, November, 1888, was in a most unfavorable condition; fever constant, though not excessive, 101° to 103° being about the limit; pulse 120 to 135. She was anæmic, and the urine was albuminous. The left thorax was dull to the clavicle, the apex of the heart was at the right of the sternum. The patient had not menstruated for five months, and for some time previously to that menstruation had been irregular and scanty. Digital examination of the womb revealed no marked enlargement or displacement.

The operation was done November 22, 1888, the intention being to remove portions of four or five ribs. After removing sections of two ribs the condition of the patient was such that it was deemed advisable to complete the operation as quickly as possible, and to defer further excision for a secondary operation. Digital examination through the opening thus made revealed a cavity bounded below and anteriorly by the diaphragm and pericardium. The upper boundary could not be reached by the examining finger. A large quantity of pus and thickened masses of fibrin were removed through the opening. The cavity was well irrigated with iodine water, and the operation hastily completed. This case remained under my care for more than a year, the last drainage-tube being removed December 23, 1889, and the wound permanently closing soon after. The condition of the patient remains most excellent up to the date of writing. During all this time the wound was dressed at intervals of from one to three or four days.

An interesting and important event in the history of this case was the discovery, a month or more after the operation, of a tumor in the abdomen. Reviewing her menstrual history, it was feared that an ovarian tumor had appeared to complicate matters. No positive opinion was given, however, and it was soon evident that the patient was pregnant. Seven and a half months after the operation she was delivered, apparently at full term, of a healthy, large male child. The pregnancy was, no doubt, an important factor in the closing of the empyæmic cavity.

After the thorough drainage there was a considerable but slow expansion of the lung. The excision of two ribs permitted some depression of the chest-wall, and the upward pressure of the diaphragm by the pregnant uterus was an element quite as important as the other two in the obliteration of the cavity. The child, her fourth, is now over a year old, and is strong and healthy. The first child was stillborn, the second lived three days, and the third three months.

CASE IV.—Erna T., aged ten years, was first seen June 8, 1889. A diagnosis was soon and satisfactorily made of catarrhal bronchitis and left-sided pleurisy. After ten or twelve days an accumulation of fluid was evident. Later, the fever and sweating, and the slight œdema over the left side, suggested pus. An exploratory puncture under chloroform, with permission to operate, if necessary, was advised, but was at first declined. No improvement following, permission was given. On July 3d, the left thoracic cavity was aspirated, and three or four ounces of thick pus were withdrawn. On the following day the cavity was incised and drained. Between the time of the aspiration and the time of operating there seems from the history of the case to have been a rupture through the lung into a bronchus, for there was increased cough and expectoration of what was said to resemble pus. Some pus, I think, was swallowed, for after the incision the flow of pus, though free, was not so great as I had been led from previous physical examination to expect. The opening into a bronchus was proved by the distinct odor of chloroform at the incision. The pleura was not washed out. On

July 24th, one drainage-tube was removed. On July 31st, the remaining tube was found to have been accidentally pushed or drawn out of the wound, and the opening was practically closed. No attempt was made to reopen the wound. On August 1st and 2d there was a marked rise of temperature. On August 3d the temperature was normal, and a good recovery was soon established.

CASE V.—This case was one of double empyæma, and is worthy of note chiefly on account of the rarity of this condition, the operation and treatment being similar to those detailed in the cases already described.

Alban P., aged five years, was taken sick on March 21, 1890. He had an ordinary bronchitis, with considerable pain referred to the left side. Effusion was soon manifest on this side, and after puncture with a hypodermic needle the operation of incision with drainage was made, April 14th. At this time examination of the right side revealed slight dulness low down posteriorly, but the respiratory murmur was transmitted, though faintly, through the dull area. This dulness increased in intensity and extent, and the right side was incised, April 29th. No irrigation was used in this case. The fact that thicker pus and fibrous masses were obtained from the right side would seem to indicate that the trouble began in both sides at the same time.

The patient made a most excellent recovery, the first opening being closed on May 16th, and the second four days later.

These are all the cases that have been under my own care. Another may be mentioned as a further illustration of the same simple mode of treatment. The patient was a youth, aged eighteen years, with empyæma of the right side, and was seen by me with Dr. C. H. Lewis. Incision and drainage, as above described, were followed by a satisfactory recovery.

Two other cases are also perhaps worthy of mention. One was that of a child about a year old. There were cough, emaciation, and fever, with dulness over the lower half of the right pulmonary area. An unsatisfactory puncture with a hypodermic needle was made, and two drops of yellowish serum, which may or may not have contained pus, were found in the needle. Puncture under chloroform, and an operation, if then found to be indicated, were advised and declined. The child improved somewhat while taking cod-liver oil, but died suddenly about six weeks later. The other was the case of a little girl, aged about seven years. The symptoms were somewhat obscure, except that pain was prominent. On about the ninth day there was dulness over the lower part of the left chest, somewhat more marked anteriorly. There was doubt as to the cause of the dulness, and the request to settle it by exploration with a hypodermic needle resulted in a change of doctors. The child died about a week later.

TREPHINING AND OPENING THE DURA MATER AS A DIAGNOSTIC MEASURE IN DISEASES OF THE BRAIN—WITH THE REPORT OF A CASE.

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THE patient was a boy twelve years old. His family history was unimportant. He was active and healthy, except for the usual diseases of children, until May, 1888, when he had a convulsion, followed in twenty-four hours by an attack of mumps. He recovered from this, and had no further trouble until the following September, when he had a second convulsion. He was now placed in my care, and with the use of bromides he averaged about one fit weekly until July, 1889. From this time until the following September he had none. In October of the same year he had two in one day, and after that two each month until January, 1890. From the latter date until March, 1890, they were more frequent. The patient was then taken to another physician, under whose treatment he improved, and from the first week in March until the last of April he had no fits, when, notwithstanding the continuation of the treatment, he grew worse, and was brought again to me on May 1st, when he was having from twenty-five to fifty convulsions every twenty-four hours. I now learned that he had had *la grippe* in April, and that before he had entirely recovered he fell into the water and remained outdoors in his wet clothes for some time. When he reached his home his neck was stiff and the head drawn to the right side. Until May 1st, his attacks were those of ordinary epilepsy, with an aura on the outer side of the right leg and thigh, except that they usually commenced in and were most marked on the right side, and that sometimes when he felt a fit coming on "he would get up and run about for a minute or two, belch considerably," and thus prevent a major attack.

After May 1st, he did not lose consciousness during the attacks, which would commence by flexion of the fingers of the right hand, quickly followed first by tonic then clonic spasm of the right upper and lower extremity, and right side of the face, in the order named.

Paralysis commenced May 1st, involving first the thigh and leg, then the arm, and lastly the face on the right side; motor aphasia developed with the facial paralysis. The paretic symptoms increased until July 2d (the date of operation), at which time he was unable to walk, could not raise his hand to his mouth, sat with his head falling forward and to either the right or left, and with a decided lack of expression in the right side of the face. He spoke with great hesitation and difficulty. There was no ptosis. Though his slowness in replying to questions and lack of facial expression made it appear that his mental faculties were failing, yet I feel certain, from frequent examinations, that they were as active as

[1] Read before the Fort Wayne Academy of Medicine, August 12, 1890.

ever, or nearly so. So far as I could determine, none of the muscles were completely paralyzed, but only in a condition of marked paresis. There was no loss of sensation, and the patellar reflexes were normal. He was given 90 grains daily of bromides, in different combinations, from May 1st until the operation. For the three weeks preceding the operation he also took from 75 to 120 grains of potassium iodide daily.

I should state that in 1884 the boy fell and received a scalp-wound in the left occipital region, but there were not then, nor are there now, any signs of fracture of the skull, nor is there any tenderness in the region of the scar.

The patient was sent to Dr. K. K. Wheelock for an examination of the eyes, but absolutely nothing abnormal was found. During last June his temperature was found on several occasions to be from one to two degrees above normal.

There was no tenderness upon percussion, but there was slight headache, referred to both temporal regions. On three occasions only was any peculiarity of the pupil noticed—dilatation of the right. Having presented the patient to the Fort Wayne Academy of Medicine, and being unable with the aid of the Fellows to arrive at a diagnosis, and in view of the fact that the patient was steadily growing worse, I proposed an exploratory trephining, to which the parents and the patient gladly assented, each remarking that death was preferable to existence in the present condition. It was understood that whatever was revealed by the exploration should be dealt with in whatever manner seemed best. It was explained to the parents that we might find no visible lesion, and that in that case there would yet be a *faint hope* that the operation would be beneficial.

Operation.—The operation was performed, July 2d, in the City Hospital in the presence of Drs. Jelleff and Boyers, of Decatur, and Drs. Dills, Mary Wheery, H. S. Myers, C. Proegler, and Greenawalt. Dr. W. P. Wheery administered the chloroform, while Drs. A. P. Buchman and H. McCullough assisted.

The left Rolandic fissure was located according to the method of Championnière, as described in *Wyeth's Surgery*, the lines on the scalp being marked in ink and a fine bone-drill used to mark the skull after the flap was turned down. A long horseshoe-shaped incision was made, the flap turned down, and two buttons of bone were removed with a seven-eighth-inch trephine, the second being a little below and in front of the first. The intervening bone was removed with a rongeur, thus exposing the dura overlying the ascending parietal and frontal convolutions and a portion of the foot of the third frontal. Nothing abnormal appearing, the dura was divided by a curved incision to the length of the opening in the bone and turned aside. Examination of the areas supposed to be involved, by inspection, palpation, and by the use of a probe and exploring-needle, revealing nothing, the dura was stitched, the flaps were united and dusted with iodoform, and the parts covered with carbolized gauze and a bandage. Silk was used for all the stitches. Strict asepsis was observed and nothing but boiled and strained water was used in cleansing the wound. The dressing was changed at the end of twenty-four hours, as the outer bandage was stained by the oozing. It was not removed again until the seventh day, when the stitches were removed and complete primary union found to have taken place. From the 5th to the 14th of July the patient was under Dr. H. McCullough's care, during my absence from the city, and for his kindness I desire here to offer my thanks.

There was nothing of importance in the convalescence so far as concerns the operation *per se*. The highest temperature—100½°, with a pulse of 140—was found on the day following the operation. Contrary to Dr. McCullough's wishes, the patient left the hospital on the tenth day after operation, and since that time has not been confined to bed.

The convulsions steadily decreased up to the sixth day, when the patient had only four; they then increased until the ninth day, when he had eleven; while on the tenth and last day in the hospital he had seven. After he went home they continued to decrease, so that between July 25th and 31st he had but one.[1] With the decrease in number there has also been a decrease in severity, while there is a very marked improvement in his speech, and he walks unassisted, and is able to throw objects to a distance of 100 feet with his previously paralyzed arm and to feed himself with it. His facial expression is likewise improved, he is cheerful, sings, plays, and, in short, enjoys life once more.

REMARKS.—I do not wish to be understood as reporting this case as one of epilepsy permanently benefited by operation, nor as one which promises complete recovery. Time alone can decide as to the ultimate results.

Before the operation I was inclined to look upon the case as one of epileptoid convulsions due to organic disease of the cortex or subcortical substance about the Rolandic fissure, and I am still inclined to that opinion. The number and character of the convulsions, of late, and the paresis exclude, it seems to me, the diagnosis of functional epilepsy. Acquired syphilis is out of the question, while the family history and the treatment by the iodides set aside the idea of inherited syphilis. The paresis of only certain groups of muscles, together with the absence of sensory paralysis and eye-symptoms, is against a diagnosis of basal disease. Certainly the clinical history of the case since May 1, 1890, clearly points to the diagnosis of Jacksonian epilepsy due to a lesion of the Rolandic zone, commencing probably in the upper and extending thence to the lower portion. And in view of the normal appearance of the cortex and the absence of tenderness on percussion we may conclude that the sub-

[1] The patient walked to my office, a distance of more than a mile, to say that he had had no convulsions for eight days. His paresis also continues to improve.

cortical substance is the seat of the trouble. In the absence of paralysis we would be less warranted in thus localizing the trouble, for then we might reasonably conclude that the irritation originated at some distance from the seat of explosion.

"But if following these limited spasms paralysis of motion should occur in the parts formerly convulsed . . . . and still more so if a succession of monoplegia should result in a general hemiplegia, then we may with certainty diagnose organic disease of the Rolandic zone of the opposite cerebral hemisphere."[1]

But what shall we say of the attacks prior to May 1st, when, as I have said, they resembled ordinary attacks of *grand mal*, except that the convulsions usually commenced, and were worse, on the right side.

It must also be remembered that while at first the attacks began in the outer side of the knee and thigh, that after May 1st they began with flexion of the fingers. This raises the question as to whether we may not have in this patient a functional epilepsy followed by organic changes, such changes being the result of the epileptic attacks or a complicating disease. I was not able to see the patient in one of the attacks prior to May 1st, but had the symptoms been noted by a trained observer my opinion is that, taken with the history since that time, we would have a well-defined clinical picture of Jacksonian epilepsy.

The most important point connected with this, as well as with all similar cases, has not yet been touched upon. I have concluded—and for the sake of argument will assume that the reader agrees with me—that the trouble is organic and involves the subcortical substance in the Rolandic zone; but, what is the exact nature of the disease?—is it a tumor? and if so, is it fluid or solid? and if solid, is it encapsulated? To decide these and similar questions exploratory trephining is not only warrantable but demanded in many cases, and it is to add my mite to the statistics of this question and to excite a discussion by the Fellows of the Academy that I report this case so soon after the operation. Ferrier, as quoted by Gray in the article previously referred to, says: "In the absence of definite indications as to the character of the tumor . . . . trephining is, in my opinion, justifiable as a diagnostic measure."

I desire to state as my opinion that it is advisable as a diagnostic measure in cases other than those of tumor; for while it may not, as in my case, clear up the diagnosis, it is *per se* an operation attended by very trivial danger considering the gravity of the cases in which it should be resorted to.[2] If the disease proves amenable to operation, we avert death, which is otherwise inevitable; if it cannot be removed by operation, or nothing is found, we have done our duty. Besides, the operation will occasionally, albeit rarely, cure, though nothing further than trephining and exploration be done. How the cure is brought about in such cases no one knows, any more than we know why or how exploratory laparotomy cures tubercular peritonitis, or removal of spinous processes and lamina of vertebra cures spinal paralysis, or dilatation of the cervix uteri cures the vomiting of pregnancy. To my mind the most satisfactory answer to this question is that given by Dercum and White,[1] who say:

"It would seem as though the local shock had been promptly followed by a corresponding reaction, in which the vitality of the tissues had been raised sufficiently high to determine a return to the normal state."

Several other points of interest suggest themselves in connection with this case, but these I will leave until a future time, when I shall report the further progress of the patient. I will conclude with the statement that it is my firm conviction that exploratory operations should occupy the same relation to brain surgery that they do to abdominal surgery.

100 FAIRFIELD AVENUE.

[1] Ferrier, quoted by Gray in the Annual of the Universal Medical Sciences, vol. ii. p. 2, 1890.

[2] I mean, of course, when performed with thorough antiseptic precautions.

THE TREATMENT OF HÆMORRHOIDS BY EXCISION.[1]

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MY object in presenting this paper is to urge the more general use of Whitehead's operation of excision in the treatment of certain cases of hæmorrhoids.

In 1887, Mr. Whitehead, of Manchester, reported[2] three hundred consecutive cases of hæmorrhoids which had been successfully treated by the method of excision and suture. His operation is performed in the following manner:

1. The patient is placed on a table in the lithotomy position, with the hips well elevated.

2. The anal sphincters are then thoroughly paralyzed by digital stretching.

3. The mucous membrane of the rectum is divided at its junction with the skin around the entire circumference of the bowel.

4. The mucous membrane, with the attached hæmorrhoids, is dissected from the submucous tissue, and the cuff or cylinder thus formed is dragged below the margin of the skin.

5. The mucous membrane above the hæmorrhoids is then divided transversely, thus removing

[1] Annals of Surgery, July, 1890.

[2] Read before the Philadelphia County Medical Society, September 10, 1890.

[3] British Medical Journal, February 6, 1887.

the pile-bearing area, and the operation is completed by suturing the upper margin of the severed membrane to the free margin of the skin.

The advantages claimed by Whitehead for this method of treatment are based on pathological and on surgical reasons. He considers that the internal hæmorrhoids, which are generally regarded as localized distinct tumors, amenable to individual treatment, are, as a matter of fact, component parts of a diseased condition of the entire plexus of veins surrounding the lower rectum, each venous radicle being similarly, if not equally, affected by an initial cause, constitutional or mechanical.

The operation of excision is the only one which removes this whole diseased area. It is, therefore, demanded for this pathological reason. It is in addition surgically more perfect than any other method of treatment, because it provides for the readjustment of healthy tissues with the object of securing primary union and rapid convalescence. It does not leave the sluggish ulcer of the cautery, nor is it attended with the pain and slow convalescence of the ligature.

My experience with this operation is limited to ten selected cases. Only those cases were selected in which there existed a complete circle of hæmorrhoidal tumors surrounding the lower margin of the rectum, since for such cases Whitehead's method of excision seems to be particularly adapted.

The details of the operation are simple and easy to execute. In dividing the mucous membrane from the skin it is best to begin at the posterior margin of the anus in order to prevent the blood from obscuring the field of operation. No skin should be sacrificed, even though there appear to be redundant tags around the margin of the anus. The skin always retracts somewhat and the tags shrivel and disappear before firm union has taken place. Failure to observe this rule may result in subsequent serious trouble. Kelsey[1] reports the case of a woman who had been subjected to a so-called Whitehead operation and who presented herself to him with a complete circle of excoriated mucous membrane extending for one inch outside the anus. It is probable that in this case the operator had sacrificed too much skin.

On the other hand, the upper section of the mucous membrane should be made in the same horizontal plane throughout, in order to prevent subsequent ectropion ani.

The dissection of the mucous membrane from the underlying tissue is exceedingly easy except in some cases of long-standing piles. The attachment of the submucous tissue is very loose, and separation can be effected with the finger or with the handle of the scalpel. It is not always possible to dissect the piles completely from the underlying structures, as they may involve not only the mucous but the submucous tissues, and in such cases it is necessary to cut partly through the piles until the healthy mucous membrane above is reached. Repeated attacks of inflammation of course render closer the adhesion of the pile-area to the underlying structures. In one of my own cases in which the piles had existed for forty years, and had frequently been inflamed, the adhesions to the two sphincters were so close that a few muscular fibres were cut away during the removal.

The amount of blood lost during the operation is surprisingly small. Whitehead states that he has often operated on severe cases and not found it necessary to twist a single vessel. In five of my cases no hæmostasis was necessary. Bleeding is avoided by adhering closely to the mucous membrane in the dissection, as the larger arterioles lie beneath the submucous tissue. Arterial bleeding occurs in those cases of old piles which have been subjected to previous operation or to attacks of inflammation, and in which dilatation of the rectal and anal arteries has taken place secondary to dilatation of the hæmorrhoidal veins. The bleeding from the upper divided edge of the mucous membrane can be reduced to a minimum by following Whitehead's method of inserting the sutures as each portion is divided, or by adopting Marcy's plan of introducing a circle of shoemaker-stitches of catgut around the mucous membrane above the piles before cutting the mass away.

Whitehead's advice is to remove in all cases the complete cylinder of mucous membrane, whether or not the whole of this area appears to be diseased. He gives this advice for the reason which I have already stated, that he considers the individual piles as but part of a general pathological condition, involving all the lower hæmorrhoidal veins of the rectum.

Whether we accept this pathological view or not, it is best to follow his plan, and to make a complete circular division of the mucous membrane, as by this method the most perfect surgical results are obtained, and ectropion ani prevented. I have seen a case in which only one-half of the circumference of the mucous membrane of the rectum was removed, and a few hours after the operation an œdematous swelling formed in the other half, which has now resulted in a hæmorrhoidal tumor almost as annoying as the one for which the operation was performed.

In attaching the mucous membrane to the skin Whitehead uses interrupted silk sutures. He never removes the sutures, but allows them to ulcerate through—a process which is very easily accomplished. In my own cases I have used the continuous catgut suture.

[1] New York Medical Journal, October 5, 1889.

The treatment of these cases after operation is very simple. It is rarely necessary to use opium or the catheter. An opium and belladonna suppository introduced immediately after the operation is in most cases all that is required. The bowels can be moved in from twenty-four hours to four days, and with very little pain. Absence of pain after Whitehead's operation is due to the thorough paralysis of the sphincters, and to the fact that no source of irritation is left beyond that of a clean linear incision, united without tension and without strangulation of tissue.

A glance at the histories of my own cases shows that they were all cases of aggravated hæmorrhoids, in which the piles covered the whole circumference of the lower part of the rectum. In all the cases the disease had existed for many years, and two had been previously subjected to operation by the ligature.

In only one case was there anything like free bleeding during the operation.

In all the cases a suppository of ½ grain of extract of opium and ½ grain of extract of belladonna was introduced immediately after the operation, and this was all the opium required except in three cases, in which ⅙ grain of morphine was subsequently administered.

The catheter was used in only three cases, and in these for a period not longer than twenty-four hours. The length of time that the case is confined to bed depends to a great degree upon the social standing and the disposition of the patient. In my cases it varied from two to ten days. Every case should be able to sit up in four or five days, and to resume work in ten days or two weeks.

The bowels were opened without pain in from twenty-four hours to four days after operation.

No complications of any kind followed these operations. Union takes place quickly, and generally one dressing, taken off when the bowels are moved, is all that is necessary. In no case was there incontinence from paralysis of the sphincters, or any tendency to stricture from contraction of the scar.

Since the publication of Whitehead's paper his method of operating has been tested by many surgeons. The operation cannot be criticised on surgical grounds, as it is certainly the most perfect plan of treatment, surgically speaking, which has been proposed.

The immediate removal of the tumors, the coaptation of healthy tissues, and primary union, are substituted for slow strangulation by the ligature, or removal by the cautery and healing by granulation.

The applicability, or the necessity, of this operation in all cases of hæmorrhoids, is, however, open to criticism. If we accept Whitehead's views in regard to the pathology of piles, and believe that the whole venous plexus surrounding the anus and the lower end of the rectum is in a pathological condition in every case of hæmorrhoids, even though there may be present only one or two isolated tumors, then, of course, the complete removal of this area is indicated.

But that this view is not true is proved by the thousands of cases which have been permanently cured by the ligature and the clamp. The method, however, is indicated in all cases of aggravated hæmorrhoids in which the vascular tumors cover the whole or the greater part of the circumference of the bowel. In such cases the operation presents no great difficulties. Statistics show that it is at least as safe as operation by the ligature or the clamp, and it is certainly followed by a more rapid convalescence, and much less pain and discomfort.

PERNICIOUS ANÆMIA, WITH A REPORT OF FIVE CASES.

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EACH of the following cases possesses features sufficiently interesting for publication. My experience leads me to believe that pernicious anæmia is much more common than is generally supposed, and that, as in other diseases of an obscure nature, a diagnosis is seldom, if ever, made until the case has lasted some time. This has been true in all my own cases, and I have seen nothing in the reports of cases which would lead me to believe that my experience differs from that of others. It would be very interesting to know the effects of treatment begun in the early stage.

CASE I.—B. T. P., aged forty-nine years, a physician practising in the northern part of Canada, came under the joint observation of Dr. Byron Field, of Toronto, and myself, on May 1, 1889. His family history contained nothing of moment. He had been subject to "bilious" attacks occasionally for several years; his health was otherwise good until three or four years ago, when he noticed that he was less vigorous, and that his "bilious" attacks were more frequent. He gradually became anæmic, but this did not attract particular attention till the autumn of 1888, when anæmia was quite decided. He continued to attend to his laborious practice, though with increasing difficulty. Toward the end of the winter of 1888–89 he found it almost impossible to continue his work, but he persevered until he was compelled to give it up—about April 15th. He had been under treatment for some time for anæmia, taking iron and digitalis freely but without benefit.

After giving up work he grew rapidly worse, and on the evening of May 1, 1889, when first seen by

Dr. John Ferguson, Dr. Field, and myself, he was in a state of marked delirium, from which he could be recalled to only a semi-conscious condition. He had just passed through an extremely severe chill; his temperature was 104° F., pulse 120, small and weak. The body was well nourished, but there was extreme pallor with a decided lemon color. Vomiting troublesome; the stomach was distended with gas, much being belched up; and there were frequent loose motions with considerable flatus and colicky pains. The heart and lungs presented nothing abnormal; the liver and spleen did not seem to be enlarged.

On the next day the blood was examined; it had a venous tinge and appeared diluted. The corpuscles showed no tendency to form rouleaux; they varied greatly in size and shape, measuring from three to twelve μ. Of the large ones the greater number were irregular in shape, being oval, pear-shaped, balloon-shaped, and pointed. Some seemed to be budding, the bud being from one-fifth to one-third the size of the corpuscle. All the corpuscles were pale, but some were decidedly paler than others. There was also some granular débris, rather dark in color. In estimating the number of corpuscles Gowers's hæmacytometer was used. There were 745,000 per c.mm.—an average of 100 squares. No increase in the number of white corpuscles. Not having the appliances the percentage of hæmoglobin was not estimated, but it was very low, though probably relatively higher than the corpuscles. The patient was given champagne at short intervals until the stomach became quiet; then a pill of arsenious acid, $\frac{1}{40}$ grain, every three hours, the interval to be shortened to two hours after a few doses. Diet: milk, raw or peptonized, matzoon, beef peptonoids, etc.

May 3. Another chill; temperature 104°; enemata of milk and whiskey given.

4th. He was more rational; had a slight hæmorrhage from the mucous membrane of the mouth and spat a few clots. He retained medicines and nourishment, but was extremely restless and obtained only short periods of sleep; diarrhœa troublesome. The urine had to be drawn by a catheter. It was high-colored, specific gravity 1010, acid, no albumin. Not examined with the microscope. The arsenic was given every two hours, except during sleep. He received ten doses (¼ grain) in twenty-four hours.

6th and 7th. Polyuria—about 100 ounces of urine being passed daily, which was acid, and darker than such dilute urine should be; specific gravity 1005. Great thirst and restlessness.

8th. A severe chill lasting fifty minutes at 1 A. M. Temperature during chill 104°. Very restless and delirious. Often refused food. Temperature had fallen to normal at 5 A. M.

10th. His appearance was better. Dr. R. A. Reeve examined the eyes and found the fundus very pallid and containing many small hæmorrhages. There was a large hæmorrhage into the conjunctiva of the right eye. The blood on being drawn looked like cherry-juice. Corpuscles were more regular in shape and seemed higher colored; less débris; 731,746 per c.mm. Some tendency to form rouleaux. Bowels regular. Urine paler and in considerable excess.

20th. Progress slow; greatly troubled with flatulence. Consciousness gradually returned. Has taken increasing amounts of nourishment, and with relish. A hasty examination of the blood showed about 1,000,000 red corpuscles per c.mm.; corpuscles much more regular in shape; no débris; fewer microcytes. Arsenious acid, ¼ grain daily.

25th. Greatly improved in appearance; a decidedly pink tinge to lips and finger-nails. A few days before this the veins on the back of the hands were of a peculiar magenta color. His appetite was good and had to be restrained. As more convenient, the arsenic was given every three hours and liquor arsenicalis substituted for arsenious acid, from thirty to forty minims being taken daily without any gastric disturbance being caused. Some sores in the mouth healed rapidly after applications of nitrate of silver.

30th. Able to take a full diet. Corpuscles showed more tendency to form rouleaux, and were more regular in shape, but still varied in size; 1,676,687 per c.mm., the average of 80 squares.

June 7. Color greatly improved; able to sit but not to walk. Corpuscles 2,300,000 per c.mm., quite regular and scarcely distinguishable from normal.

11th. The fundus oculi still pallid, arteries small but otherwise normal.

18th. Corpuscles 2,500,000 per c.mm.

July 1. Corpuscles 3,217,000 per c.mm.; rouleaux fairly formed; a few irregular corpuscles found; diameter varied from 6.6 to 10 μ. Felt well; appetite and digestion good; bowels regular. He slept well, and was able to walk a mile. Still taking 30 minims of liquor arsenicalis daily. A few days after this he went home.

About July 15th, a copious purpuric rash appeared on the feet, legs, and body, with severe pain and some swelling of the feet, which were relieved by rest and elevation. He said that he had had wandering pains in various parts of the body for four or five weeks before this acute attack. He stopped taking the arsenic and these symptoms soon improved. The rash lasted ten days, but the pains disappeared slowly, and even now pain in the feet troubles him somewhat. It is possible that the rash was due to the arsenic, as a few cases are on record of such a rash from the medicinal use of the drug.[1] The pain and tenderness of the feet may have been due to neuritis caused by the arsenic, but this is very improbable, as such a result is all but unknown. More probably the pains were rheumatic.

July 27. Corpuscles 4,500,000 per c.mm., normal in size and shape; rouleaux well formed.

November 6. Looked and felt well. Able to attend to a fair amount of professional work without becoming tired. General health better than it had been for three or four years. Some disagreeable numbness in feet and a little in hands. Urine normal. Corpuscles 4,100,000 per c.mm., by a hasty estimate.

Since then he has continued well and is attending

[1] Duhring, Diseases of the Skin.

to his practice as usual. He writes me that he feels in better health than he has for several years.

CASE II.—The notes of this case are from my hospital case-book, and were taken by Dr. R. W. Palmer, my clinical clerk.

W. J. H., aged thirty-nine years; born in the United States; family history good; a piano-tuner. A small man, not robust, and with a fastidious appetite. Temperate in the use of alcohol, but smoked excessively for some years. His health was fair until 1885, when he had troublesome diarrhœa for some months, and he has not been very well since then. In the winter of 1888, he said, he had pleurisy and pneumonia, and while recuperating from this in the following June, his attention was first called to his extremely anæmic appearance. His complexion had been high-colored. He was in the Toronto General Hospital during most of the winter without improving. He went out in February and returned in May, 1889, after which he was unable to leave his bed. He was extremely anæmic, with a decided greenish-yellow or lemon tint. Conjunctivæ pearly. He was of spare habit but not emaciated. The skin was moist. Temperature, A. M. 99°; P. M. 99.8° F.; pulse 100, fairly full but soft. Heart and lungs normal; soft murmurs at base of the neck. Liver normal; spleen slightly enlarged. Bowels irregular and diarrhœa frequent. Urine high-colored, normal in quantity, acid, specific gravity 1017. No albumin or sugar, but some uric acid crystals. Night-sweats troublesome. Blood-corpuscles 606,000 per c.mm., the average of sixty squares of Gowers's hæmacytometer. No rouleaux formed, many corpuscles were oval, tailed, budding, and pointed. Their size varied from three to eleven μ. Liquor arsenicalis was given, at first 3 minims three times a day, and later 5 minims every three hours. But he soon complained of epigastric pain and diarrhœa, and the abdomen became distended so that the arsenic had to be withdrawn until these symptoms abated. It was then given again, but in three or four days the pain returned and the arsenic was again intermitted. Fearing that he magnified his suffering, an arsenical pill ($\frac{1}{40}$ grain) was ordered under the name of "pil. anæmiæ," that he might not know he was taking arsenic. The pills were given three times a day at first, increasing to six daily, by which time the pain became unbearable. The pills were omitted until the symptoms abated, when they were again taken, to be omitted when the pain became troublesome.

In this manner the treatment was kept up until he left the hospital for the Convalescent Home. At the same time the most nourishing food he could take was given to him, reliance being placed chiefly on milk and nitrogenous foods. The blood was examined from time to time and found to improve gradually, the improvement in the character of the corpuscles being much more rapid than the increase in their number. The temperature remained about normal, occasionally rising to 100°; at such times his urine was darker and he was feeling worse.

June 1. Corpuscles 606,000 per c.mm.
July 3. Corpuscles 1,043,000 per c.mm.
18th. Corpuscles 1,560,000 per c.mm.
August 9. Corpuscles 1,810,000 per c.mm.
16th. Corpuscles 1,620,000 per c.mm.
25th. Corpuscles 1,950,000 per c.mm.
September 4. Corpuscles 2,180,000 per c.mm.; much more nearly normal in shape; tendency to form rouleaux.
16th. Corpuscles 2,520,000 per c.mm.
October 8. Corpuscles 2,600,000 per c.mm.; only an occasional irregular corpuscle; a few microcytes; rouleaux better formed.

He was then removed to the Convalescent Home, a supply of medicine being given him, with directions to omit it when the pains became troublesome and to resume it again when they disappeared. The matron of the Home was so much alarmed at the pain produced that she refused to allow him to remain if he continued to take the medicine. He called to tell me this on October 19th. He was then apparently greatly improved. Corpuscles 2,780,000 per c.mm.; very little irregularity; rouleaux well formed; the color of the corpuscles uniform and not so dark as in June. He was directed to omit all medicines.

November 6. Corpuscles 3,250,000 per c.mm.; no abnormal ones seen. Looked and felt well. Walked a great deal.

December 24. Corpuscles 4,560,000 per c.mm.; normal. Did not remember having ever felt so well, looked perfectly healthy, and weighed 130 pounds—five pounds more than his ordinary weight. Had taken no medicine since leaving the hospital in October.

When last seen, this summer, he was in excellent health and without any trace of his illness. There has not been an opportunity since December to examine the blood.

CASE III.—This case I had the privilege of seeing with Dr. George Acheson, of Toronto.

Mrs. M., young, of healthy parentage, gave birth to her second child in January, 1889. She passed through the puerperal period satisfactorily, except that she was rather pale and did not regain her strength readily. Lactation was well established. The pallor progressively increased, and there were recurrent attacks of diarrhœa. She was given iron in various forms without benefit. Some febrile movement was discovered in February and sepsis was feared, but nothing could be found to account for the fever which was not marked or constant. The increase in the anæmic condition was gradual, and pernicious anæmia was not thought of as a possibility until March 1st, by which time a lemon tint of the skin had developed—this tint never became very marked. The urine had been high-colored, of normal volume, and low specific gravity. The blood was found to contain only 1,781,000 red corpuscles per c.mm; their size varying up to 13 μ. No rouleaux were formed, and there was decided irregularity in the shape of the corpuscles. There was also a considerable number of Eichhorst's corpuscles present. The eyes were examined by Dr. R. A. Reeve, and two hæmorrhagic patches found in one eye and three in the other.

Calomel was given to empty the bowels of any offending matter, and naphthalin to keep them disinfected as far as possible. Liquor arsenicalis,

from 10 to 20 minims daily, was given as the stomach would bear it. At the same time the patient was allowed to drink freely of a chalybeate water and red wine.

There was but little improvement in the condition of the blood during March. The temperature gradually fell to normal. She then began to improve slowly, with occasional slight relapses, and by the end of five or six months she had regained her usual health.

The condition of the house not being above suspicion, an examination was made. Under the cellar floor the ground was found covered with stable manure, placed there by the workmen while building. This was decomposing and giving out a very unpleasant odor. There is little doubt that this had much to do with the patient's illness, as other persons in the house became more or less indisposed also. The conditions following parturition rendered her more susceptible, and caused the poison to affect her in the manner described. Whatever the explanation may be, she presented all the phenomena of a decided case of pernicious anæmia, and we must consider it as such until fuller knowledge of the pathology of that disease enables us to exclude everything not belonging to it, no matter how close the resemblance. Should the now rather prevalent opinion that pernicious anæmia is due to a special poison gaining access to the system through an unhealthy gastro-intestinal tract prove correct, then it will be easy to see the connection between that unsanitary cellar and Mrs. M.'s illness.

Case IV.—Dr. A. T. C., a highly-esteemed physician of Toronto. His history is briefly as follows: He had an attack of *la grippe* in January, 1890, and was confined to his house for three weeks. Though far from well, he attended to his professional duties during February. He had a second attack of *la grippe*, in March, and has been quite ill since then. Marked anæmia followed this second attack. At one time malignant disease was suspected, as vomiting, almost at once after food was taken, was a prominent symptom. There were some evidences of Bright's disease, and still are. In April he went to Long Island for the change of climate. He returned in June slightly improved, and since then has been sometimes better, sometimes worse. His temperature is often slightly elevated, at times 101° F. His color occasionally has a decided lemon tint, but usually only slightly so. Though he has lost flesh he is not emaciated. He is subject to attacks of diarrhœa at short intervals, and irregular vomiting.

The blood was examined in June by Dr. John Carden, who found about 1,800,000 corpuscles per c.mm, with very marked poikilocytosis. On July 31st I found the number of corpuscles to be 1,750,000 per c.mm, very irregular, no rouleaux, size from 3 to 13 μ. No increase of white corpuscles. Some reddish-yellow granular débris. The urine was dark, and required dilution by about an equal volume of water to reduce it to normal color; specific gravity 1017; decidedly acid in reaction, and contained about one-sixth volume of albumin. Numerous granular casts, some large and irregular, and most of them containing a large amount of dark granular pigment. Few renal cells, much granular débris of yellowish color.

August 12. Corpuscles, 1,780,000 per c.mm. They appeared less irregular and of better color. The patient felt and looked much better, his appetite improved, bowels were regular, urine much paler, specific gravity 1018. A trace of albumin and a few casts were found, but no yellowish pigment. He always feels worse when he has diarrhœa, and the urine becomes of a higher color. The mouth becomes sore, and the excoriations of the anus—always present—increase. He has been taking no arsenic for some time.

15th. Has had what he calls a "bilious attack"—vomiting and diarrhœa—since yesterday. Took a podophyllin pill, ¼ grain, last night. Ordinarily this would just move the bowels. Urine darker, specific gravity 1018, some pigment-granules and casts; becomes cloudy on heating. He had tried arsenic in solution and pill-form, and found that it always caused disturbance of the stomach and bowels in a few days, with a metallic taste and soreness of the mouth, and increase of the anal affection. It is very doubtful if the arsenic was entirely responsible for these attacks, for he had precisely similar ones such as the attack above described, without arsenic having been taken for days. So much was I impressed with this opinion that I strongly advised him to persevere with the arsenic, notwithstanding the discomfort caused, omitting it when these attacks showed their first symptoms, and returning to it again as soon as they passed off. The ultimate success after long perseverance in Case II. amply justified such advice. He was also advised to try minute doses of corrosive sublimate at short intervals for its antiseptic and tonic effect. He has been at the seaside for a month and has now begun to improve.

Case V.—Elizabeth H., aged twenty-eight years. Married. Family history unimportant. She has not enjoyed very good health since she began to menstruate, at the age of twelve years. She entered the Toronto General Hospital, September 1, 1890, and gives the following history of her present illness:

Two years ago she first noticed a slight greenish-yellow hue to the complexion; she was then in indifferent health. From January until April, 1889, she was quite ill, suffering as she is now, the jaundiced hue being then marked. Bowels irregular, urine at times very dark, appetite poor, and occasional vomiting. During the summer she regained fair health and was able to do her own work, her complexion becoming much more natural. This state of health continued until last winter, when she had an attack of *la grippe*, and since then has been in poor health, with a return of the jaundiced complexion. She gave birth to a child, her fourth, July 25th. She was very well for three days after labor, when her appetite failed. She got up on the tenth day, but had to return to bed and has not been able to be up since. She has had irregular diarrhœa all summer, alternating with constipation lasting for a few days. She usually vomited every morning. Appetite various, at times craving, and at others no desire for food. She is a spare woman, but not

emaciated, very pallid, and with well-marked lemon tint; conjunctivæ pearly.

Physical examination revealed nothing except a slightly enlarged spleen. Heart normal; pulse 100, and very small. Temperature has varied from 100° to normal since her entrance into the hospital, showing no regular gradations. No chills. Urine high-colored, specific gravity 1020 to 1025, some flocculent deposit; no casts or granular matter; no albumin or sugar, reaction acid. About 1,200,000 red corpuscles per c.mm, not very irregular in shape. They varied in size from about 4 to 13½ μ. No increase in white corpuscles.

The treatment consisted in the administration of beta-naphthol, 5 grains three times a day, to disinfect the bowels as far as possible, and liquor arsenicalis 30 minims daily in divided doses every three hours. The diet was milk, yolks of eggs, etc.

The results in the first three of these cases are eminently satisfactory. All the cases present to a greater or less degree the typical features of pernicious anæmia, namely, the marked pallor with the lemon tint and without emaciation; the febrile disturbance; the high-colored, acid urine of low specific gravity, but not increased in amount; the disturbance of the digestive tract as shown by the occasional vomiting and irregular diarrhœa; and lastly, the typical blood-changes.

In all, the pallor was very marked, as was also the lemon tint, except in Case III., in which it was only slight.

Except during the attack of polyuria in Case I., the urine in all the cases was characterized by a high color and low specific gravity, especially during the paroxysms in Cases I., II., and IV. In Case IV. the only one except Case V. in which a microscopical examination of the urine was made, renal casts infiltrated with many granules, were found, and after an exacerbation of symptoms, when the urine was much darker in color, many spherical yellow granules, usually in masses, were found in every specimen. When the exacerbation passed off and the patient improved, the urine became more nearly normal in color, and the granules were not present. Hunter, Mott, and others attach great importance to the presence of these signs in the urine, and think that the phenomena are sufficient of themselves to establish the diagnosis of pernicious anæmia.[1] They indicate a great destruction of red blood-corpuscles with liberation of hæmoglobin, and that the blood-destruction occurs in the portal circulation, as shown by the condition of the liver and the absence of hæmoglobinuria.

These cases agree also in the constancy with which they present disturbances of the digestive tract, the intestine being more severely affected than the stomach. The recovery of the first three cases proves the absence of any serious organic disease—the symptoms point rather to a mild catarrhal condition of the mucous membranes.

Another feature worthy of note is that commencing improvement was characterized by a better shape and color of the red corpuscles rather than an increase in their number. This was true at least in Cases I. and II.; in Case III. no note was made on this point, and in Case IV., in the few observations made, the corpuscles were found more regular in shape during the period of improvement than during the exacerbation. It would seem that the corpuscles damaged during the exacerbation had been completely destroyed, and that the new corpuscles were affected to a less degree by the destructive agent which is probably thrown into the blood during the exacerbation. The absence of marked irregularity of the corpuscles in Case V. is to be noted. It is not exceptional to meet with cases of pernicious anæmia in which, though the corpuscles are very large, the poikilocytosis is not marked.

Pernicious anæmia is characterized by no constant anatomical lesions, though lesions are, however, exceedingly numerous and of great variety. The most constant are those of the digestive tract, and so frequent are these that they have been considered by some as the essential lesions of the disease. In the gastro-intestinal tract have been found malignant disease, atrophy of the peptic glands, inflammatory thickening of the interstitial tissue of the gastric mucosa, and degeneration of the nervous structures of the intestinal walls. In a few, intestinal worms —ankylostoma duodenale and bothriocephalus latus —or a foreign body, as a nail, have been present and their removal followed by recovery. None of these, however important they may be in individual cases, can be regarded as the essential cause of the disease. They exist in many cases without the development of any of the phenomena of pernicious anæmia, while they are absent in other cases of the disease.

Of the anatomical changes resulting from pernicious anæmia, the most important, next to those occurring in the blood itself, indicating as they do the nature of the disease, are found in the liver and kidneys. The hepatic cells in the periphery of the lobules are deeply infiltrated with granules of free iron. Similar granules are found in the epithelium of the convoluted tubules of the kidney. Mott found an abundance of this iron pigment in the small branches of the hepatic vein also, but none in either the intestinal or hepatic branches of the portal vein.[1]

These changes in the liver and kidneys, together with the brownish-yellow "droplets" of hæmoglobin occurring in the high-colored urine, indicate that pernicious anæmia is characterized by excessive

[1] The Practitioner, December, 1889.

[1] The Practitioner, August, 1890.

destruction of blood, which is more or less paroxysmal, and occurs in the portal circulation, with the liberation of hæmoglobin. The hæmoglobin is carried to the liver, where it is decomposed into bile-pigment and free iron, the latter being deposited in the hepatic cells, and, when too abundant for the liver to dispose of, in the renal epithelium, the former being largely excreted as normal or pathological urinary pigments.[1]

The question now arises, What is the morbific agent that causes this blood-destruction in the portal system? In a recent paper[2] Dr. William Hunter, of Cambridge, than whom probably none has done more to elucidate the pathology of this obscure disease, as the result of a careful investigation of a case ending fatally, has, he believes, shown that there were greatly increased putrefactive changes occurring in the intestinal tract, as proved by the increased excretion of aromatic sulphates in the urine. He also succeeded in isolating a ptomaïne that he had not hitherto found in connection with ordinary putrefaction. As ptomaïnes are formed from proteids by the agency of bacteria, and not from ordinary tissue-metabolism, he thinks that this ptomaïne may signify the presence in the intestinal canal of a specific microörganism. In the light of his studies he ventures the following conclusion:

"The special factor required to initiate the symptoms peculiar to pernicious anæmia is the presence, under certain favorable conditions, of organisms of specific nature within the gastro-intestinal tract.

"These conditions may be either local and permanent—malignant disease, various forms and degrees of gastritis, with atrophy of gastric glands; or general and removable—a specially unhealthy condition of the mucous membrane of the stomach and intestine, induced by the presence of intestinal parasites, or by prolonged bad nourishment."[3]

This is a very fascinating theory, and one cannot but wish that it would stand the test of future investigation, but as yet it is "not proven."

Delépine, as the result of a careful study, shows that the liver has, what he suggests might be called a "*ferrogenic*" function, by which he means that it "separates iron from effete iron-containing pigment, stores it in the form of a loose compound, and gradually elaborates it into a more stable albuminous compound, analogous, if not identical, with hæmoglobin, ready for assimilation by the young red blood-corpuscles."[4]

Mott,[5] as the result of a study of three cases of pernicious anæmia, and in the light of the observations of Delépine, suggests that the disease is an exaggeration of a normal physiological process, due to the presence of some abnormal product. Peptone, he says, if not changed, has a marked influence upon the blood, and might lead to such disturbance of this "ferrogenic" function of the liver as to cause increased hæmolysis. In connection with Hunter's theory of a chemical product of the growth of some microörganism, Mott observes that he did not *always* find a relation between the pyrexia, the diminution of the corpuscles, and the color of the urine. In my own cases, as far as my observations extended, this relationship was very marked, and especially so in Case IV.

From all these observations it seems safe to conclude that pernicious anæmia consists in an excessive hæmolytic process in the portal system, remittent and often progressive in character. As to the active agent in this destructive process there is not so much certainty, but at present it seems probable that a variety of poisons may be capable of producing it. In one case it may be a ptomaïne, in another one of the multitude of albumoses, or both a ptomaïne and an albumose may be present. It is possible that such a variety of poisons may explain the varying results obtained from treatment.

Medicinal Treatment.—With an increasing knowledge of the disease the treatment should become more rational. Since gastro-intestinal derangement is so often associated with the disease, our first efforts should be directed to correcting these disorders as far as possible. In the majority of cases an occasional calomel purge seems to be beneficial. Something should be expected of intestinal antiseptics, of which, probably, the best are thymol, beta-naphthol, naphthalin, and similar compounds. Thymol is, probably, the most powerful, but many patients find it the most difficult to take on account of disturbance of the stomach produced, often with vomiting. Beta-naphthol is more easily borne. Naphthalin, it is said, may cause choroidal hæmorrhages, which may possibly simulate retinal hæmorrhages,[1] so that the eyes should be examined before beginning its administration. Small doses of the perchloride of mercury might prove useful both as an antiseptic and as a tonic.

Arsenic still stands preëminent as the remedy for pernicious anæmia. It has effected a cure in a large number of cases, and when it has failed seldom has recovery been attained. It is characteristic of the majority of cases that they bear large quantities of arsenic without any signs of disturbance. Case I. took a fourth of a grain daily for weeks. Some, however, bear it badly, and others not at all. This, as already pointed out, may be due to the degree of gastric catarrh present. Various theories to explain its action have been advanced. By some its effects have been attributed to local antiseptic properties, a very improbable explanation in view of the small

[1] Lancet, 1888, vol. ii. Practitioner, 1889. Guy's Hospital Reports, 1889.
[2] British Medical Journal, 1890, vol. ii.
[3] Ibid.
[4] The Practitioner, August, 1890.
[5] Ibid.

[1] Kolinski: Arch. de Physiologie, April, 1890.

quantity that suffices for the cure of some cases, unless there is a special poison present over which arsenic has peculiar powers; and if this were true, it should always succeed. Others have attributed good effects to stimulation of blood-formation and metabolism. This would not account for the arrest of the excessive hæmolysis that is going on. A third view is that it affects the blood-corpuscle, enabling hæmoglobin to resist the tendency to be dissolved in the blood-serum—in other words, that it increases the resistive powers of the blood to the morbific agent, if there is such an agent. This view is certainly more in accord with the probable pathology of the disease.

Judging from my own limited experience, I think that the greatest amount of benefit will result from the administration of arsenic in frequently repeated small doses, the maximum quantity that the patient will bear being given. If it cannot be taken for more than a few days it should be intermitted until the symptoms of irritation abate. Some patients bear minute doses, a drop or half a drop of the liquor arsenicalis every hour or two, when larger doses disagree. Its administration should be persevered with, if possible, until there is decided benefit, when it may be intermitted probably without disadvantage. Case II. indicates that in some cases at least arsenic is not necessary after convalescence is well established, and that then nothing more than good food and proper care are needed to complete the cure.

In those cases in which arsenic fails, or is not well borne, iron in some form should be tried, as in a few it has succeeded after arsenic had failed. It is a matter of surprise that iron has proved of so little use in this disease. If Hunter's opinion as to the increased putrefactive processes going on in the intestinal tract be true, iron in large quantities is indicated. It has been well established, especially by Bunge,[1] that the good effects of iron in anæmia are due to its powers of neutralizing the alkaline sulphides resulting from putrefaction in the intestines, converting them into stable iron sulphide, thus preventing the sulphides from destroying the iron in the hæmatogen of the food, from which only, and not in the least from the iron of medicines, the blood derives its iron for the hæmoglobin.

Hydrochloric acid, also, should prove of benefit, as in all these cases there must be a deficiency in the digestive fluids, and the more perfect the digestion the more rapid the absorption and the less the putrefaction. Hydrochloric acid alone is, for this reason, sufficient to cure many cases of ordinary anæmia.

Diet.—Our natural impulse, in view of the profound poverty of the blood, is to give those foods which contain an abundance of nutriment for the blood-corpuscle, such as milk, yolks of eggs, meat, and such vegetable substances as the cereals. Until some other course is definitely proven to be better, it would appear best to follow our natural impulses in this matter. Food should be given in small quantities, and often, so that digestion may be rapid, thus giving less time for decomposition.

As the result of a short experience in his last case Hunter advises a trial of a more or less exclusively farinaceous diet, believing that it may be attended with less blood-destruction.[1] In health a nitrogenous diet causes a much greater destruction of blood than a farinaceous or fatty one. While this should be of very little moment in a disease in which the blood is destroyed by a special poison, yet the improvement resulting from the change of diet leads him to believe a trial of the nitrogenous foods desirable. This would certainly seem worth bearing in mind in the treatment of cases that are not doing well on ordinary diet.

In view of the decided benefit usually resulting from the use of arsenic in this disease, and of the fact that nearly all anæmias are benefited by the administration of the remedy, it seems highly desirable to resort to its use in all persistent anæmic conditions of doubtful character without waiting for a positive diagnosis. If this were done much valuable time would be saved in many cases, and possibly we would have fewer failures to record in the treatment of even pernicious anæmia.

[1] Lehrbücher Phys. und Path. Chemie, Leipzig, 1889, p. 84–95.

ULCERS OF THE LOWER EXTREMITIES.[2]

BY J. A. MACK, M.D.,
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WITHOUT attempting to discuss the pathology of ulcers, it may be said that whether resulting from occupation or any other non-specific cause, the venous circulation surrounding them will always be found faulty. The veins before ulceration are overloaded, distended, and tortuous; their valves give way and partial stagnation occurs, with transudation of serum, loaded with excrementitious matter, into the surrounding tissue; swelling results, beginning at the most dependent parts and gradually ascending, accompanied with constant irritation of the skin caused by the attempt to eliminate the effete material with which the serum is surcharged. Then if a rupture of a venous radicle, or if the slightest injury of the integument occurs, an ulcer results; or to relieve the intense itching and burning (both being worse at night), scratching is indulged in

[1] British Medical Journal, vol. ii., 1890.

[2] Read before the Central Wisconsin Medical Society, June, 1890.

until finally a small sore results, which gradually enlarges, growing painful as it increases in size.

The arbitrary varieties of leg-ulcers described in the text-books are somewhat misleading. For instance, it is said that an ulcer may become chronic from the age of the patient, improper treatment, or the character of the tissue involved; and that an ulcer may be indolent and irritable from like causes. Yet the fact is, that they all are both chronic and irritable, and so much depends upon the situation, the treatment, the avocation of the patient, and last but not least, upon the patient's susceptibility to pain, that classification is of little moment. As a rule, these cases are not seen until all home remedies have been indiscriminately tried, consequently there is much nerve-irritation in addition to a constantly-growing sore.

The foul, dirty, at times gangrenous, ill-smelling ulcer, covered with some rancid dressing and a bandage saturated with the discharge, may well be called indolent, and speaks forcibly of its owner's habits. To this class a lecture on personal hygiene never comes amiss, but unless the patient is watched the directions are never carried out.

Another class of ulcers are those with a glazed, hardened base, with thick and sometimes everted edges, that are deep, quite extensive, and accompanied with great swelling of the limb and with some eczema. Patients with these suffer greatly, both mentally and physically, and have usually been under the care of many physicians.

Sex is a factor in the symptomatology, for it matters not where situated, or whether indolent or chronic, these sores in the female can always be classed as irritable.

Having had a large experience with these cases (numbering about two hundred) during the past twelve years, and without a failure in treatment, I have arrived at the following conclusions:

1. That the average leg-ulcer is usually treated too harshly.
2. That the surface of the ulcer is a non-absorbing one.
3. That absolute rest is unnecessary.
4. That the age of the ulcer is of no importance.
5. That if the bodily functions are well performed, and if the patient is in fair health, without specific taint, internal medication is uncalled for.

Of all forms of treatment so far proposed, the rubber bandage and absolute rest are best known. My objections to these are, that where eczema exists it is aggravated; that if not present it is likely to be induced, especially in warm weather; that it is impossible to know just how much pressure each turn of the bandage will make, owing to its natural retraction; and that absolute rest is a hardship, especially if the patient's existence depends on his daily labor.

In my practice the following method has been pursued, and with such good results that I am not likely to change:

Gently douche the ulcer with either warm or cold water, dry the limb by enveloping it in a towel and dress with the following ointment: White-lead in linseed oil (common white paint)and vaseline, equal parts; carmine, a sufficient amount to color slightly. Spread thickly on lint, and apply to the ulcer, being careful that the margins are well covered. Immediately over the ulcer, and upon the dressings place a pad of absorbent cotton; now bandage carefully from the toes to the knee, applying the bandage with moderately firm, even pressure. The bandage that answers the requirements best is made from unstarched bleached muslin, and is two inches wide and from eight to ten yards long. If well applied, it is unnecessary to renew it oftener than every second day. A loose bandage or soaked dressing should be immediately changed. A good rule to follow is to renew the dressings often enough to sustain pressure and to keep the limb comfortable.

Additions may be made to the ointment to meet indications; thus, if the ulcer is sluggish or gangrenous, the addition, for a few days, of ten grains of iodide of lead to each ounce of ointment, acts as a mild stimulant, without escharotic action, and also as a disinfectant.

In applying the bandage let the patient sit on a chair with the limb straight, and the heel supported on another chair.

After healing has taken place a well-fitting elastic stocking should be worn.

MASTOIDITIS INTERNA PURULENTA FOLLOWING ERYSIPELAS.[1]

BY J. A. LIPPINCOTT, M.D.,
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THE following case, especially interesting from an etiological standpoint, presents some additional features which help to make it worthy of being placed on record:

E. S., twenty-eight years old, had always enjoyed excellent health, and had never suffered from any aural affection, his hearing on both sides having been, indeed, exceptionally acute.

He was attacked on March 27, 1890, with erysipelas of the face and scalp, which produced great tumefaction. Ten days later two large abscesses, one below the left eye, and the other above the occiput, were evacuated with a bistoury. The swelling and the discharge of pus gradually subsided during the next four weeks.

One week after the beginning of the attack, without previous pain or special local swelling, and

[1] Read before the American Otological Society, July, 1890.

without any symptoms in the throat or nose, pus began to flow from the right ear. His medical attendant, Dr. McCormick, of Greensburgh, an intelligent physician, states that at this time the walls of the external auditory canal were normal, and that the pus obviously came from the middle ear through an opening in the drum-head. About May 15th (the otorrhœa in the meantime continuing) the neighborhood of the ear became swollen, and extremely painful. Under hot poulticing these symptoms yielded in about a week. On June 22d the pain and swelling recurred, and continued until I saw the patient June 29th, when the condition was as follows:

Decided swelling and tenderness over whole mastoid region on the right side. Doubtful fluctuation in upper mastoid region. External auditory canal filled with pus, on removing which, at a point about two-thirds of the length of the canal from the external meatus, was seen a furuncular-looking mass with its base attached to the posterior wall, and large enough to render a view of the tympanic membrane impossible. Pus was seen coming from behind this mass, but apparently very little came from the mass itself. A watch of forty inches hearing-distance was heard when lightly pressed against the ear. Examination of the throat and nares negative. The patient complained of deep-seated pain behind the ear, and he was considerably emaciated.

I advised an operation on the mastoid as the quickest way of securing thorough drainage and consequent relief.

Two days later the patient returned and went to the hospital, where an anæsthetic was administered and the mastoid perforated in the usual way. A small collection of pus was found under the periosteum, at a point about three-fourths of an inch above the meatus externus; but neither there nor at any other place could any trace be found of an opening into the mastoid cells.

On perforating the external wall, which was thin, the cells were found extensively broken down, the cavity thus formed being filled with a greenish, unhealthy-looking pus, which reminded me strongly of the appearance of the pus removed some years ago from an orbital abscess following erysipelas. A warm solution of boric acid, thrown into the opening by means of a syringe, escaped through the auditory canal. The syringe was subsequently used daily, but no pus afterward issued either from the mastoid opening or from the meatus.

All the unpleasant symptoms were promptly terminated by the operation. On the fourth day the protrusion from the posterior wall of the canal had almost disappeared, and the tympanic membrane could be easily examined. A perforation in the centre of the latter, about three mm. in diameter, was seen, from which, by means of the cotton probe, a very minute trace of pus was removed. The hearing on the fifth day had improved so that the watch could be heard at two inches. Patient went home in a week with the suggestion to Dr. McCormick to continue the irrigation, and to keep the wound open as long as might seem necessary.

Erysipelas as a cause of mastoiditis interna must be rare. In the limited period which has elapsed since I saw the case above described, I have not been able to find a report of any other case arising in this way.

The sequence of the pathological phenomena is not without interest, nor, it may be added, without uncertainty. The mastoid disease may have been metastatic in character, and so, in a sense, primary. The history of the case before I saw it, however, perhaps tends to show that the first link in the chain was a painless abscess in the middle ear. Then followed invasion of the mastoid cells, accompanied with violent symptoms, and finally rupture through the posterior wall of the auditory canal, which gave temporary relief. The recurrence of the pain and swelling probably arose from blocking up of the opening in the auditory canal.

CLINICAL MEMORANDUM.

OBSTETRICAL.

Eclampsia Fifteen Days after Labor. Death.—J. H., aged thirty-six years; nervous temperament; had been married for four years when she first became pregnant. In the latter part of gestation she had a mild but persistent diarrhœa, and also œdema of the vulva and lower extremities. The œdema of the vulva was excessive and troublesome, but was relieved by treatment. Labor was normal, with but little hæmorrhage and without nervous manifestation. The patient was anæmic, but improved at once with the use of iron and arsenic. One week after confinement there was some irritation of the stomach, but this was readily controlled. She also complained of headache, which her husband stated she had been subject to for some years. Aphasia manifested itself, and when asked how she felt, she would answer, "I feel—I don't know what." The attendants stated that she occasionally had brief "nervous spells," but these attracted no attention. Temperature slightly elevated; pulse 120.

On the fourteenth day after labor damp clothes were put on her, and a few hours later she complained of severe pain below the knee extending upward to the hip and to the abdomen. Morphine and hot applications gave relief. On the next morning her pulse was 130, temperature nearly normal, appetite fair. At 2 P. M. convulsions began, four or five paroxysms following at short intervals. Inhalation of a small quantity of chloroform and the administration of chloral controlled them. Vaginal irrigation with carbolized water had been used for some days, but thinking the trouble might possibly be caused by reflex irritation from the uterus, I now used an intra-uterine douche. The os was somewhat patulous and discharged a slightly-stained mucus which was not offensive. Rapid respiration and coma followed, with death thirty-six hours after the first convulsion.

C. V. MOORE, M.D.

FAIRMOUNT, IND.

MEDICAL PROGRESS.

Euphorine.—Under the name of euphorine, SANSONI (*Therapeutische Monatshefte*, September, 1890) describes the physical and therapeutical properties of a new compound which, chemically, is phenylurethan. It is a white crystalline powder, with a faint aromatic odor and a slight taste suggesting that of cloves. It is sparingly soluble in cold water, readily dissolves in alcohol, and is best administered in white wine, in which it is easily dissolved.

Given to healthy men, in doses of from 1½ to 3 grains, euphorine has no apparent effect upon the pulse, the respiration, or the temperature; and in dogs large doses do not lower the blood-pressure, as determined by the manometer. Still more important is the fact that it causes no changes in the blood—in animals the blood remaining normal even after toxic doses have been given.

Clinically, Sansoni finds that euphorine possesses valuable antipyretic, antiseptic, antirheumatic, and, in some cases, analgesic effects. As an antipyretic, he has employed the drug in fever from various causes, such as typhoid fever, croupous pneumonia, phthisis, acute rheumatism, pleurisy, orchitis, influenza, etc., administering it either as a powder or dissolved in wine. The fall of temperature begins within an hour after the administration, reaches its maximum usually in about three hours, and continues, as a rule, for from five to seven hours. In some cases the fall is more brief, and in a few it continues for fourteen hours. The subsequent rise of temperature is usually sudden and accompanied with a chill, the duration and severity of which are proportionate to the intensity of the disease. During the period of apyrexia the patient has a feeling of well-being. Cyanosis is seldom observed, and the pulse and respiration are regular. The antipyretic effect varies in different persons, and it is best to begin with a small dose (1½ grains), increasing until the proper amount is determined. To most adults, from 15 to 22 grains can be given daily without producing harmful effects, its antithermic power being about twice that of antipyrine.

In rheumatism, both acute and chronic, the doses of euphorine should be larger than those given to reduce temperature. From 22 to 30 grains, or even more, should be given daily. In acute rheumatism the good effects appear very soon after the drug has been administered; the temperature falls, and the pain, whether due to inflammation or to the pressure of the swelling, disappears.

As an analgesic, euphorine is very useful in orchitis, less so in sciatica, lightning pains of tabes and trigeminal neuralgia, and is almost useless in intercostal neuralgia and migraine.

The observation that carbolic acid is formed when euphorine is brought in contact with an alkali, led Sansoni to test its antiseptic powers, which, in the case of an obstinate ulcer and one of chronic ophthalmia, he found were excellent.

The Relations of the Cœliac Plexus to Diabetes.—LUSTIG, in a series of experiments on animals to determine the function of the cœliac plexus, found that extirpation of the plexus, electrical excitation, and irritation by acetic acid produced similar symptoms, namely: glycosuria, usually temporary, but occasionally permanent; acetonuria, which, when of long duration, led to severe symptoms; and subnormal temperature. Further, to determine whether the cœliac plexus is a necessary organ in the production of diabetes, Lustig punctured the diabetic area in the medulla in dogs from which the plexus had been removed. Diabetes resulted from the puncture, showing that the cœliac plexus is not always concerned in the production of the disease.—*Centralblatt f. klinische Medicin*, September 6, 1890.

Pill for the Treatment of Chronic Constipation.—In the treatment of chronic constipation NOTHNAGEL advises the use of the following, when a laxative is necessary:

℞.—Podophyllin . . . . 4½ grains.
Extract of aloe } of each . 45 "
Extract of rhubarb }
Extract of taraxacum, a sufficient quantity.

Mix and divide into forty pills, of which one, two, or three may be taken at bedtime.—*Therapeutische Monatshefte*, September, 1890.

Removal of a Portion of the Liver by an Elastic Ligature.—TERRILLON reports a case in which a portion of the liver was removed by means of an elastic ligature. The patient was a woman, fifty-three years old, who for some years had suffered from a painful swelling situated in the right lobe of the liver. An exploratory puncture revealed the presence of a small quantity of fluid resembling that of a hydatid cyst. Although after the puncture the swelling diminished, Terrillon opened the abdomen on the right side by an incision parallel to the false ribs, exposed the tumor, and placed an elastic ligature around it. At the end of seven days the sphacelated portion with the ligature was removed. The wound, of which the base was formed of hepatic tissue, was separated from the peritoneal cavity by firm adhesions. Cicatrization was complete at the end of the sixth week.—*The Medical Press*, September 10, 1890.

The Microbe of Alopecia—Recent researches at the Institut Pasteur have been made by DRS. VAILLARD and VINCENT in regard to a form of baldness occurring in soldiers, which is very similar to, if not identical with, alopecia areata. Their report, published in the *Annales* of the Institut, show that the malady, in this particular instance, is caused by a micrococcus which, when cultivated and inoculated in lower animals, produces an analogous baldness. Hitherto dermatologists have strongly inclined to the belief that most of the cases of alopecia areata are forms of a tropho-neurosis, no microorganisms with an apparent causative relation having been discovered. The fact, however, that there are on record several cases with histories pointing very directly to contagion, has raised doubts as to the correctness of that explanation.

Massage in the Treatment of Dyspepsia.—DR. CSÉRI, of Budapesth, publishes an account of a mechanical plan of treating chronic dyspepsia which he has lately been carrying out with excellent results. The plan consists mainly in suitable dieting, and in a peculiar kind of mas-

sage. The author practises the latter when the stomach is full—about two or three hours after dinner. Frequently changing his mode of proceeding, he strokes and kneads the stomach from the fundus toward the pylorus, first gently and superficially, then more energetically, for ten or fifteen minutes, the patient lying on his back with his legs drawn up, and breathing with his mouth open. During the last few minutes the massage is extended to the bowels. The manipulation is neither painful nor disagreeable, but is very well borne. After the massage the patients experience a feeling of warmth and comfort; occasionally they are sleepy, but the fulness and sensation of weight have generally disappeared. The immediate result of this kind of massage is that the stomach is freed from gas, thus producing a great feeling of relief. The time chosen for the massage is when part of the already chymified ingesta begins to enter the duodenum from the healthy stomach. In dyspepsia the stomach is generally sluggish, and either the quantity or quality of its secretion is impaired, and consequently chymification or peristaltic motion, or both, are insufficient. It is also known that mechanical stimulation of the stomach may increase its secretion, and the author considers himself justified in concluding that massage thus increases the process of digestion. He also finds that at the same time muscular power increases and that the massage mechanically helps to advance the stomachic contents into the duodenum. The rapid cure of pains and general malaise after eating in cases of nervous dyspepsia is easily explained by the fact that the manipulation dilates the pylorus, so that after a few days it offers no impediment to the passage of the food.—*The Lancet*, September 20, 1890.

Toxic Effects of Creolin.—BOREHMEYER reports the case of a child who received a severe contused wound of a finger, which was treated by applications of a solution of creolin (one and one-half per cent.). On the fourth day the finger was covered with vesicles containing a yellowish liquid. On changing the dressing the eruption disappeared, but returned when the creolin was again used.

WACKEY publishes an account of 17 surgical cases dressed with creolin. In 10 union by first intention occurred, but in 7 the creolin produced eczema, erythema, and vesicular eruptions, and desquamation in large patches. At the same time the patients had more or less constitutional disturbance, and an examination of the urine showed that the toxic symptoms were attributable to the presence of phenol. It would seem that children are especially susceptible to the deleterious effects of phenol and its derivatives, and hence are more readily affected by creolin than adults are.—*Therapeutic Gazette*, September, 1890.

Socin's Zinc-paste Dressing.—VON NOORDEN (*Brun's Beiträge z. klinisch. Chirurgie*) has found Socin's zinc-paste an admirable dressing after operations for harelip. The paste is composed of:

Zinc oxide	50 parts.
Zinc chloride	5 to 6 parts.
Water	50 parts.

When exposed to the air it dries very rapidly, forming a firm crust. It should be freshly prepared for use.

After completing a harelip operation, the suture-line and vicinity are disinfected and thoroughly dried, then the paste is spread over the entire upper lip, by means of a brush or spatula, and is reinforced with a very few thin layers of cotton. If the wound extends into the nostril, the dressing should also extend into the opening, but, of course, without blocking it. The nasal secretions will not soften the paste. In from four to six days the dressing may be changed to remove the sutures, and, if not already partly loosened, it can be clipped off. A fresh application is then made, and allowed to remain until it crumbles. The paste has also been used in small wounds of the face and scalp, after herniotomy, extirpation of labial cancer, and even after cœliotomy.—*Annals of Surgery*, September, 1890.

The External Use of Aristol.—POLLAK, of Prague, has had excellent results with the external use of aristol in the treatment of a case of strumous enlargement of the right lobe of the thyroid. He used an ointment prepared as follows:

℞.—Aristol	45	grains.
Potassium soap	7½	drachms.
Ether, Alcohol (of each)	75	minims.—M.

In a case of epididymitis applications of vaseline containing ten per cent. of aristol also caused a rapid disappearance of the swelling.—*Monatshefte f. Praktische Dermatologie*, September 15, 1890.

Treatment of Eczema and Acne.—According to *Le Semaine Médicale*, September 3, 1890, UNNA recommends the following ointments for the treatment of eczema and acne.

℞.—Lanolin	5	drachms.
Liquid chloride of calcium	10	"
Oil of cade	2½	"
Zinc ointment	7	"

This ointment is employed in cases of chronic eczema of a pruriginous form, accompanied by profound infiltration of the skin.

℞.—Zinc ointment, Lanolin, Liquid chloride of calcium (of each)	2½	drachms.
Precipitated sulphur	45	grains.

The following ointment may be used in cases of acne:

℞.—Lanolin, Lard, Liquid chloride of calcium, Oxygen water (of each)	2½	drachms.
Precipitated sulphur	1	drachm.

The action of the oxygen water in this last prescription is for the purpose of removing the comedones commonly found in the face of persons suffering from acne. Wherever rapid decoloration of these comedones is desired the following may be used:

℞.—Oxygen water	5 to 10	drachms.
Vaseline	5	"
Lanolin	2½	"

The Medical News.

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SATURDAY, OCTOBER 11, 1890.

SYPHILITIC DISEASE OF THE HEART.

THE power of the syphilitic poison to impress itself upon all the tissues is so well recognized, that *a priori* no objection can be raised to the recognition of a specific cardiac affection due to that virus. If, indeed, the blood be the medium of communication by which the toxic agent—microbe or ptomaïne, or whatever it may be—is diffused throughout the organism, it would seem most natural that the heart itself should suffer in a large proportion of cases. Specific inflammation of the heart-muscle, as well as of the peri- and endo-cardium, and even syphiloma of the heart are sometimes noted in autopsies. No such importance, clinically or pathologically, has yet been attributed to this especial form of syphilitic disease as would have been given it were the heart as vulnerable to this morbid agent as are the mucous membranes, the skin, the bones, the abdominal viscera, the vessels, and the nerves. Indeed, cardiac disease due to syphilis seems to be far less frequently encountered than gross vascular lesions—aneurism, cerebral thrombus, or rupture of weakened vessel-walls.

PROFESSOR ZAKHARINE, of Moscow, according to an extract from his clinical lectures (*Revue Générale de Clinique et de Thérapeutique*, August 20, 1890), believes that the infrequency of cardiac syphilis is not real but apparent, and complains of the want of proper attention to the subject on the part both of clinicians and of pathologists. Especially, he says, have the syphilitic lesions of the cardiac nerves and vessels been neglected. His indictment of the clinicians, moreover, is more severe than that which he brings against the pathologists. "Among the causes of cardiopathies," he says, "syphilis is indeed enumerated—they speak of gummous myocarditis; but on the other hand, not one word is said of the semeiology of syphilis of the heart, so that the perusal of treatises on internal pathology leaves the impression that cardiac syphilis is merely a 'find' of the autopsy, and pertains more to the domain of anatomy than to that of the clinic. One seeks in vain for an answer to the questions, Under what clinical form does syphilis of the heart present itself? How shall it be treated?" The number of personal observations reported toward filling this lacuna in clinical studies is ten.

The acknowledgment is candidly made that, as a rule, syphilis of the heart is characterized by a great complexity of symptoms referable in part to alcoholism, gout, chronic arteritis, gastro-intestinal troubles, and syphilitic lesions of other organs. Moreover, the cardiac symptoms are exceedingly variable, comprising continuous dyspnœa, with palpitation and a sense of oppression, paroxysms of cardiac asthma and of thoracic angina, œdema, and effusion into various cavities. The heart is usually enlarged through hypertrophy of the left ventricle; the pulse is feeble, rapid, and irregular; and frequently there is a systolic murmur.

Now in all this there is nothing at all characteristic, and the further fact is admitted that the diagnosis is to be based upon the antecedents of the patient; whereupon the institution and success of specific treatment—sodium iodide internally, and mercurial inunctions—confirms it. Notwithstanding the success of the treatment, there remain "objective signs of enlargement of the heart, and perhaps a slight systolic murmur beneath the sternum."

There is this to be observed, however, in the report of Zakharine's cases, that the administration of the ordinary cardiac remedies, digitalis and the like, was without influence; while amelioration began with the institution of specific treatment. Furthermore, neither valvular lesions nor alterations of the integrity of the orifices were manifested by objective signs in any instance.

The cases are divided on the basis of their symptomatology into three groups: myopathic, neuro-

pathic, and mixed. Both mercurial inunctions and the internal use of the iodide are considered indispensable in treatment. The inutility of digitalis and its congeners has already been remarked. Two additional therapeutic measures are considered: the institution of a strict milk-diet, and the use of blisters over the præcordium. The milk-diet is recommended because it lessens the gastro-intestinal troubles and increases diuresis, while indirectly, by its diminution of ascites and meteorism, it removes some of the provoking causes of dyspnœa and angina. It is also supposed to diminish the fatty deposit over the heart by causing increased absorption; but no proof is forthcoming in support of this theory. The soothing effect of præcordial blisters, while marked in cases of peripheral neuritis of the thorax, especially angina and intercostal neuralgia in the gouty and rheumatic, is but insignificant in syphilis of the heart.

While this subject is an important one, and we believe that it does deserve more attention than it has received, yet there seem to be two points overlooked by the author. The one, that inquiry is always made by the careful physician into possible syphilitic taint, hereditary or acquired, in the class of cases described, and if it is found, specific treatment is at once instituted—the cardiac complications being assigned, not the prime *rôle* the author would give, but being looked upon as part and parcel of a general infection. Secondly, it is a fact, although not a well-known fact, that sodium iodide and potassium iodide in small doses are extremely useful agents in the treatment of irregularity of cardiac action not due to syphilis.

Furthermore, in our own hospital experience with broken-down, alcoholic, syphilitic subjects, the general nervous, cardiac, vascular, and visceral changes are in general so far advanced that no therapeutic measures can do more than palliate. While, as to diagnosis, if one is willing to ignore the fact that both the whole organism and the organism as a whole are diseased, he can pick out any system he pleases, nervous, circulatory, respiratory, secretory, or any other, to bear the brunt of his nosological discrimination.

LAPAROTOMY THE WRONG WORD.

ALTHOUGH medical science is being continually purged of names which through long usage have been almost sanctioned, there yet remain a number of terms which are so distinctly erroneous as to make a change in their employment necessary. Within the last ten years the term "laparotomy" has come to be employed by the profession whenever it is desired to indicate that entrance has been made by the surgeon to the abdominal cavity through the belly-wall in any of its parts—whether the incision be made about the umbilicus, high up under the diaphragm, low down over the pubis, or, indeed, when it is made over either groin.

Our attention has been called to this point more particularly by an interesting little pamphlet, published by DR. R. P. HARRIS, of Philadelphia, who is so well known as a statistical authority upon abdominal operations, particularly those connected with diseases of females. Dr. Harris shows that the term "laparotomy" signifies an incision made into the flank and not into the anterior wall of the body, and suggests that in its place we employ the term "cœliotomy" to designate all operations in which the anterior belly-wall is opened.

Dr. Harris's suggestion as to the employment of this new term is not based upon mere dogmatic name-making, but is sanctioned, as he carefully shows, by the entire history of medicine and by the employment of the word "koilia" by the Greeks.

Every one who has been accustomed to employ medical terms for any length of time, finds it difficult to change the nomenclature to which they have become accustomed, and we fear that it will be a long while before Dr. Harris's scholarly attempt at correction of present errors is fully appreciated and followed. While a multiplication of medical terms is anything but desirable, it is equally necessary that the terms we do use should be correct, and we hope that "cœliotomy" will be employed hereafter by writers upon these subjects, and that laparotomy will be confined to indicate the operation in which the lateral portions of the abdominal cavity are operated upon.

THE EFFECT UPON THE EAR OF PASSING PROJECTILES.

IN the August number of the *Archives de Médecine et Pharmacie Militaires*, SURGEON-MAJOR NIMIER raises the interesting question of the causation of injuries to the ear by the near approach of flying projectiles, citing several instances of such lesions from the report on the Franco-German war, in three of which the drum-membrane was ruptured and in all more or less impairment of hearing re-

sulted. He gives two possible explanations, the first of which is a modified view of the effect of the "wind of the ball," to which excessive potency used to be ascribed; the other, that the sonorous vibrations are the damaging agency. Without means to decide between the two, he inclines to the latter view, and quotes some of the experimental researches that have been made in gunnery as to the aërial disturbances coming into play under the circumstances. While these furnish some interesting and curious points which make the view to which he inclines possible, it is hard to see how they can do more.

The question principally concerns the military surgeon, for the effect under consideration is too remote and unimportant, in most of its aspects, to interest the gunnery expert, and the amount of experimentation bearing upon it has not been large. Beyond the "blast" region near the muzzle of his gun, the gunner is interested only in the influence of the atmosphere in retarding and deflecting his shot. Yet very interesting studies have been made both in this country and abroad in the photography of the projectile in rapid flight, and it has been found possible to secure pictures of the aërial waves set in motion by its passage. It has thus been shown that a cushion of condensed air is present in front of the shot, that waves stream off both from its pointed head and its sides, and that in the partial vacuum which is left behind it a series of undulations follow which may be visible even to the unaided eye. Probably as the result of this last phenomenon, the point has been noted that a shot moving with a velocity far in excess of the usual speed of sound, carries with it the noise of its discharge, until its flight is retarded to less than 1140 feet a second, when the sound-vibrations moving with their normal speed outstrip it for the remainder of its course. The sonorous vibrations conveyed to the ear by a close-passing shot at high speed are not only those of its own flight, but have the added influence of the discharge. Yet it is too much to believe that these are at all able to cause a rupture of the drum-membrane, much less to knock down and stun a man, as in some of the recorded instances; and it seems "far-fetched" to ascribe the deeper labyrinthine damage to the accompanying sonorous vibrations, rather than to the more palpably potent "wind." To this latter we need not ascribe the power to tear off limbs or effect such gross lesions as were once charged to it; but experiment has shown that it is unquestionably a noteworthy force, quite capable of producing the injuries under consideration.

Probably the same phenomenon occurs near the path of the shot as is at times noted near the gun. The discharge forces the air away from the muzzle in a powerful wave which acts in all directions, though chiefly in the line of fire; but this is followed by a counter-wave of air rushing inward to replace that which has been disturbed. Glass broken by the concussion of heavy guns is not infrequently found to have fallen outward; and there are instances of the same effect when the drum-membrane has been ruptured and a flap turned outward. A passing shot has doubtless both a compressing and a suction effect upon the air in the auditory canal; and the damage is more probably due to the rapid alternation of these two forces than to the direct power of either, although they seem sometimes sufficient to throw a man down.

The persistent impairment of hearing after such an accident is a common result of even slighter injuries, such as a light blow upon the ear. Most aural surgeons have seen instances of permanent tinnitus and lessened hearing which dated from a slap, a shout, or even the kiss of a child upon the ear, and seemed to be due to labyrinthine concussion. Scepticism cannot always find any other cause as probable; and as a kiss has been known to rupture the drum-head (doubtless previously diseased), there is reason to accept the possibility of far-reaching effects from seemingly insignificant and invisible injuries.

Other effects incidentally mentioned by our author, may have no little influence on the function of the ear. He refers to several instances of epileptic seizures and other profound nervous disturbances which have had their origin in the terrific turmoil of battle and have proven both severe and lasting. Aside from the hysterical losses of sensation, there is room for much damage to the organ of hearing under the circumstances; and anyone who has made his recruit's obeisance to the shell which went screaming past him, has doubtless felt that there was a physical shock in the hurtling vibration to which it gave rise even when at a distance. Here the sonorous vibrations alone come into consideration; but it must remain almost impossible to discriminate between their physical and their mental effect, and consecutive impairment of hearing must seem rather a remote and indirect result.

A NEW MEDICAL MAGAZINE.

WE have received a copy of Vol. I., No. 1, of *The Journal of the State Medical Society of Arkansas*, which is published at Little Rock, Dr. Lorenzo P. Gibson being its editor.

The journal is well printed, on good paper, and seems to fulfil all that its friends could wish for it, its chief reason for existence being the idea of publishing a medical journal which would represent medical thought in that part of Arkansas, and afford an avenue of publication for the proceedings of its parent, the State Medical Society of Arkansas. We hope it may prove a great success.

REVIEWS.

A MANUAL AND ATLAS OF MEDICAL OPHTHALMOSCOPY. By W. R. GOWERS, M.B., F.R.S., etc. Third edition, revised throughout, with numerous additions and additional illustrations. Edited with the assistance of MARCUS GUNN, M.D., F.R.C.S., etc. Philadelphia: P. Blakiston, Son, & Co., 1890.

THE second edition of Dr. Gowers's work on Medical Ophthalmoscopy bore the date 1881, since which time so much advance has been made in ophthalmic science that a third revision has been long desired. In the meantime, too, Dr. Gowers had issued his splendid work on nervous diseases, in which he gave evidence that he was well aware of the many pathological relations between the eye and the nervous system, and of the great value of ocular symptoms in the diagnosis of nervous diseases. In this third edition of his Ophthalmoscopy, further proof that the work has undergone a competent and thorough revision is afforded by the appearance of Dr. Gunn's name upon the title-page.

This excellent and almost unique treatise needs no praise, and contains so much of value that minor criticisms will not be construed either as hypercriticism or as detracting in the least from the value of the book as a whole. One may, therefore, the more freely express a regret that so many inelegant and even ungrammatical sentences have been carried over to this edition. Any page will furnish examples. One has frequently to read a sentence several times to detect the exact meaning conveyed by a slovenly and slipshod arrangement of words. For instance, and by no means the worst:

"They always indicate irregularities in the retina in which the vessels lie, commonly swelling, as in retinitis and retinal œdema."

"The aggregations of lymphoid cells which may occur in the nuclear and molecular layers, adjacent to an inflamed disk in tubercular meningitis, have been regarded as such, but their tubercular nature is uncertain."

An instance of revision and not rewriting is afforded by the recommendation, carried from the second edition, to use atropine for dilatation of the pupil, followed by the subsequent and new mention of the preferable agents, homatropine and cocaine. The paragraph in reference to atropine should have been left out, and the use of atropine, simply as a dilator of the pupil, condemned.

A great improvement in the present edition consists in the insertion in the text, and in connection with the subjects to which they refer, of the figures representing the minute anatomy of the tissue under consideration. The cuts themselves have been reproduced by a new process, and are much improved. New illustrations have also been added, and usually they are excellent, though that on page 5 illustrating opaque nerve-fibres conveys a very misleading idea of the more common appearance of this peculiarity.

Under tobacco- and alcohol-amblyopia no mention is made of the possible (or impossible) differential diagnosis of the two, nor of the relative influence of either the alcohol or the tobacco in producing an identical lesion and train of symptoms. Uhthoff's noteworthy work is referred to under the heading of Chronic Alcoholism (wrongly credited to the *Ophtalmic Revue* instead of to *Graefe's Archiv*), but under Tobacco-poisoning it is not mentioned.

Among the substances causing visual disorders should have been included a number of toxic alkaloids, such as mytilotoxin, vanillin, etc.

The appendix contains excellent and much-needed advice upon the methods of sketching the fundus oculi.

THE JOHNS HOPKINS HOSPITAL REPORTS. REPORT IN GYNÆCOLOGY. I. By HOWARD A. KELLY, M.D. Johns Hopkins Press, September, 1890.

THIS report, the first one which has been published in this branch of medicine by Johns Hopkins University, is typical of the gynæcologist who contributes most of the articles to its pages, showing as it does not only his possession of operative ability, but a wide knowledge of the literature and technique necessary to the successful operator in this branch of medicine.

The pamphlet is illustrated by several very good views of the operating-rooms, and is printed in handsome style in large type.

We congratulate Dr. Kelly upon the contents of the volume, as showing what he has done since he left Philadelphia, and we consider him fortunate in that he has so convenient an opportunity as these reports for the publication of the results of his work.

CORRESPONDENCE.

NEW YORK.

To the Editor of THE MEDICAL NEWS,

SIR: This summer has seemed more than usually dull in medical circles, possibly owing to the very large number of physicians who have taken the opportunity to enjoy a European trip, and at the same time attend the International Medical Congress. Besides this, the season has not been marked by the usual amount of sickness, and the absence of long periods of intensely hot weather has had a most beneficent influence on the infants who were trying to fight their way through "the second summer." Of course, there has been plenty of summer diarrhœa, but not much true cholera infantum, thus tending to confirm the opinion held by many students of pædiatrics, that it is long-continued, rather than intense heat, that favors the occurrence of this very fatal malady. Some philanthropists might be disposed to

argue that the improvement in health was due to the labors of the many free physicians, who were sent out under various auspices to look after the health of those who occupy the most crowded and poorest districts of the city; but this, I cannot believe, is an adequate explanation. Medical charity has been dispensed with the same prodigality which in recent years has won for New York an unenviable reputation among the medical profession, and called forth many earnest protests; but those who are best acquainted with the workings of the charities know how feeble is their influence, and how little real progress is made. To preach the gospel of cleanliness in an Italian tenement is to strike terror to the hearts of its occupants, or to heap ridicule upon one's own head; while to insist upon a carefully-regulated diet for a sick infant among the poor Polish Jews means, to them, feeding the baby with lady-fingers and bananas. This season our tenement-house people have not only been supplied with free medicine and medical attendance at their homes, but they have been given beef-tea, milk, infant-foods, and that most costly luxury —ice. They have been taken on numerous day excursions, have been sent to the seashore until their sick children regained their strength, and have even been fed and clothed at the expense of their more fortunate fellow-citizens. All this is most praiseworthy if kept within proper limits, but to the physicians who are brought in actual contact with the beneficiaries of this charity, there is much food for earnest thought. It is exceedingly common for these people to declare solemnly that they have not even a few cents with which to buy the medicine, but it is the rarest to hear any such objection if the physician prescribes whiskey. With all the wealth of medical talent of New York City laid at their feet, it is not surprising that the dwellers in our tenements have learned to select their medical attendants, and they not uncommonly dismiss their family physician who has only a plain "M.D.," in order that they may be treated by Professor ——— of "the College."

The various medical schools have been thoroughly renovated, and each is straining its resources to the utmost to rival its neighbors. The Medical Department of the University is about to celebrate its fiftieth anniversary. During the half century of its existence it has conferred the degree of M.D. upon five thousand eight hundred and thirty-two matriculates. The Faculty have adopted a most commendable measure this year—namely, the requirement of a preliminary examination as a condition of matriculation. The University was the first in New York to adopt the method of clinical teaching by dividing the class into small sections. The College of Physicians and Surgeons has adopted the same plan at the Vanderbilt Clinic, and last year more than one hundred thousand patients furnished the material for this purpose.

The Sloan Maternity Hospital, which is upon the grounds of the College of Physicians and Surgeons, has established a very active obstetric service, about nine hundred deliveries having taken place there in the two and a half years since the hospital was opened. A few years ago, a practical knowledge of obstetrics could be obtained by only a very few medical students; now, in addition to the hospital just mentioned, there has been recently opened for the special purpose of private instruction, an institution known as the "Midwifery Dispensary." It is situated near the populous down-town districts on the east-side, and is managed by several men who have had large experience both in the teaching and practice of obstetrics. A salaried resident physician and a limited number of students who reside at the institution, are always ready to answer calls, and as the cases are attended at their homes, the students have excellent opportunities to learn something of the difficulties that present themselves in private practice, and which are almost unknown in a well-appointed maternity hospital.

CHICAGO.

To the Editor of THE MEDICAL NEWS,

SIR: The fall term of the College of Physicians and Surgeons was opened on the evening of September 23d, at the college building, with music, dancing, and a banquet. The introductory address was delivered by Dr. C. C. P. Silva. The names of 125 students have been enrolled, with promise of several more.

Dr. William M. Tomlinson, of our city health department, in comparing the mortality reports of last year, says that Chicago is the lowest. The figures are as follows: Brooklyn, 23.76; New York, 22.79; Philadelphia, 20.82, and Chicago, 17.44.

An assistant health commissioner will shortly be appointed to succeed Dr. Dixon, but as yet the name of the new appointee has not been made known. The salary is $2500.

The property-owners in the vicinity of Cook County Hospital have sent in a strong protest against the erection of a city morgue in the hospital grounds.

It is said that there are several young physicians in Chicago who have no office, but travel about like doctors in the olden times. They go to drug stores at different hours to meet their patients, who pay very small fees, but by this means avoid the necessity of going to a hospital. It is perhaps a good thing for the sick who cannot afford to have doctors come to the house, and is certainly a new way to build up a practice.

Dr. Joseph Zeisler was elected a member of the German Dermatological Society, while in Berlin attending the International Medical Congress.

It is rumored that preparations will shortly be made to revive the *Chicago Medical Journal and Examiner*, of which Dr. S. J. Jones was formerly editor.

Dr. John A. Benson, Medical Superintendent of the Cook County Insane Asylum, who had charges of mismanagement and the improper employment of patients preferred against him, for contract work at Dunning, was recently exonerated by the commissioners.

Professor H. D. Garrison, in a lecture a short time ago, stated that the crumpled and crushed form of the human ear was originally caused and is now maintained by the habit of lying on the side of the head, and that the habit has resulted principally from the increasing weight of the brain. The question originally seemed to be whether man's ancestors would profit most by large brains or by symmetrical and perfect acoustic apparatus, and nature by selection had promptly decided in favor of a large brain.

The disciples of the new cult, known as "orificial surgery," are all homœopaths. They recently held a

meeting here to effect permanent organization, and hereafter they will convene annually. One of the most prominent of these *oriphysicians* is to deliver a special course of lectures on *orificial surgery* this winter, and all persons interested in this branch may attend for a small fee and receive enlightenment on the formation and removal of pus-pockets.

A clinical society is soon to be formed, known as the Chicago Clinical Society, with Dr. William T. Belfield as its first president.

The opening exercises of the Chicago Medical College and the Rush Medical college took place on September 30th, in their respective amphitheatres. Professor F. C. Schaefer delivered the introductory lecture of the former college, and Professor J. H. Etheridge that of the latter. Professor Roberts, of the Northwestern University, of which the Rush Medical College is a part, spoke briefly, saying that there had been a gratifying increase of attendance in all the departments. He estimated that there are about fifteen hundred young men being educated in the various departments of the university.

Rush Medical College starts out this year with about five hundred students, or nearly one hundred more than were registered at the opening term of last year.

In connection with higher medical education the following extracts from the annual announcement of this college are of interest:

"No student who desires to meet the requirements of the various State Boards, should hereafter enter upon the study of medicine without an ample preliminary education, and the mental discipline its acquirement insures. Such preliminary education should include the study of selected works on English literature, rhetoric, logic, mental science, the fundamental principles of algebra and geometry, and the elements of physics. A knowledge of the rudiments of Latin is essential, since this in a measure removes the difficulty of acquiring the technical language of medical science. After the years 1890–91 no graduate, unless he has studied medicine four years, and taken three courses of lectures of at least five months each, as required in Illinois (and six months each in Iowa), can begin the practice of medicine in these States without passing a rigid examination before the State Board of Health."

The Chicago polyclinic, profiting by the experience of the successful special course given last Spring, has made extensive provision for the accommodation of a large number of practitioners. A spacious amphitheatre, a well-appointed dissecting-room, and laboratories have been erected; and the teaching corps has been strengthened by several valuable additions.

The special course will comprise three distinct series of clinics and demonstrations, as follows:

1. Abdominal and pelvic surgery, with illustrations upon dogs and cadavers, by Professors Senn, Fenger, Parkes, Belfield, and Etheridge.

2. Clinical lectures and demonstrations, in the amphitheatre, in the various branches of medicine and surgery, by Professors Hoadley, Colburn, Hotz, Ingals, Church, and Fütterer.

Professor Moreau R. Brown will perform intubation and demonstrate the technique of the operation; and Professor Charles F. Stillman will give clinical instruction in orthopædic surgery and exhibit recent appliances for the treatment of deformities and diseases of joints, and demonstrate their uses. Professor P. S. Hayes will deliver a course of lectures on electro-therapeutics and the Apostoli method of treating uterine fibroids.

Dr. William G. Eggleston, formerly assistant editor of the *Journal of the American Medical Association*, is, and has been for some time, editorial writer on the *Chicago Herald*.

Cupid cut a large swath at the recent International Medical Congress, said a prominent physician of this city. According to a Berlin paper, one of the results of the Congress was the publication of four hundred engagements of marriage.

One of the ward clubs, of Chicago, has selected for County Commissioner, Dr. J. R. Brandt, who was consulting physician to the Cook County Insane Asylum and Infirmary for three years, and attending physician to the Cook County Hospital for two years. We believe that it will accord with the interests of Cook County if one of the county commissioners is a physician, for the reason that he is well qualified to look after the Insane Asylum, Infirmary, and similar medical institutions.

Professor Walter S. Haines, of Rush Medical College, recently made a chemical analysis of portions of the body of Mrs. Hattie Pettit, for whose alleged poisoning, her husband, the Rev. William F. Pettit, is to be tried at Crawfordsville, Indiana, on October 4th, and has reported to the State's attorney that he discovered strychnine in the parts examined.

American physicians, said a prominent doctor recently, seem to have a mania for prescribing the waters of European medicinal springs, and in consequence many wealthy individuals cross the water, who might, with equal benefit to themselves, patronize American springs. If American physicians would study our medicinal waters and be more patriotic in their recommendations, the health resorts of this country would be more thoroughly appreciated.

The wife of a well-known physician of Chicago recently took charge of her husband's accounts, and when she had gathered a sufficient sum of money she bought eighty acres of land on the South Side of the city, paying $600 per acre. Recently she sold the entire tract for $1,000 per acre, having made exactly $32,000 in three months. Her husband never saw the property nor gave the matter of its purchase or sale any attention.

BALTIMORE.

To the Editor of THE MEDICAL NEWS,

SIR: The College of Physicians and Surgeons, rejoicing in a new hospital and new lecture-halls, welcomes its students to more perfect facilities for laboratory studies which are now considered so essential.

The Johns Hopkins Hospital moves steadily onward in its well-chosen path, offering special courses of study which have been eagerly sought even by established practitioners among us. This institution is now beginning to find its true place in our city. It is useless to deny that the relations between it and our medical men were not cordial during the early months of its existence. It was opened with a grand flourish of trumpets, and the daily papers began at once to publish the most extravagant accounts of "wonderful" opera-

tions and cures ascribed to the different professors, and no physician or surgeon in private practice knew at what moment his patients might be spirited away by enthusiastic friends to be treated "better" in the wonderful new hospital wards. Later the professors took offices in our prominent streets, and added private practice and consultation to their hospital duties. The physicians of Baltimore, supposing that these newcomers, of wide reputation and introduced to the public in such an imposing way, would be rivals in both general and consulting practice, naturally could hardly repress certain doubts as to their own future or a feeling that the proceeding was not quite "fair play."

At present, however, there are prospects of harmony. The newspaper notices of extraordinary operations and successes have become infrequent or have ceased to appear, whether in consequence of the earnest remonstrances which have been made with the Johns Hopkins Hospital authorities I am not prepared to say. Personal acquaintance with some of the new professors has shown that they will be a very agreeable addition to our medical circles. The fact that septicæmia and death are not strangers to the new hospital wards has had a somewhat soothing effect on the enthusiasm of the public, and we have learned that while the newcomers must be respected as equals they need not be feared in the fields of either operative work or general medicine.

The dispensary nuisance, which caused an outcry from East Baltimore practitioners, seems to have been somewhat controlled by the care which the Johns Hopkins physicians have shown in the exclusion of well-to-do patients. It is said that such patients are noted at the first visit, and that their pecuniary position is at once investigated by a special agent of the dispensary.

The University of Maryland School of Medicine has endeavored to keep pace with the other schools by extensive repairs of its old buildings and by additions to them. It has also engaged excellent trained nurses for the hospital, and established a training-school in which young women may obtain careful instruction in nursing.

Baltimore has at length begun to follow with earnestness the example of her northern sister-cities in the employment of specially trained nurses in private practice. Many excellent nurses have already been induced to come here from northern training-schools, and others have been obtained from our own hospitals, but the great and increasing demand for educated nurses, without whom the practitioner must always work at a disadvantage, can never be fully met until our own training-schools begin to supply the deficiency.

The Medical and Chirurgical Faculty, which last year took vigorous steps toward the position of the State Medical Society, will soon hold its semi-annual session in one of the towns on the other side of the Chesapeake. It is very earnestly hoped that this society will so unite in itself the divergent interests of the profession that at some early date it may take the lead in securing some remedy for the great and shameful abuses in the department of public medicine. A medical law which shall repress quackery and restrain our colleges from graduating uneducated students is sadly needed. In connection with this it may be stated that the movement toward a lengthened curriculum, to which our colleges appeared to give consent, is likely to end, at least in those institutions where such a change is most needed, in mere talk.

The State Board of Health is making itself useful in resisting the careless pollution of our smaller water-supply at Lake Roland, which lies in a section of the country that is in some respects desirable for summer residence, but which is annually visited by epidemics of dysentery and typhoid fever.

It can hardly be said that our city Health Department is any more efficient under its new Commissioner than it was before he entered with such apparent zeal upon his duties. We have now, it is true, a very imperfect list of cases of contagious disease occurring each week printed neatly upon the back of the health report, but the health-force is still unfitted for its work, and physicians often appeal in vain for the correction of conditions which threaten the health of families and neighborhoods. As was honestly said by one who controlled a sanitary appointment in the city "the offices are for the benefit of the Democratic party," and woe be to the Health Commissioner who attempts to replace an efficient party-worker by an efficient sanitary agent. It is probably true that if physicians stood up persistently against such shameful abuses and showed the public what is done in other cities and what might be done here, they would ultimately win in the contest, but each concerns himself with his own personal advancement, and the politician gets the spoils. It is strange that, where there is such overcrowding of professional ranks, physicians do not claim as a natural right these sanitary posts, which yield a fair income and which are in Great Britain, if I mistake not, filled by medical men or by medical students licensed under the special diploma of "Sanitary Graduate," after a careful education in sanitary matters.

Now that women have so sturdily claimed the medical privileges of the Johns Hopkins it is said that the homœopathic fraternity will try to secure the same privileges. Whether this is true or not, I do not know, but it is not at all improbable. Unfortunately for themselves, that body of practitioners has just experienced a serious schism, and its members differ greatly in regard to the degree of infinitesimality which is necessary for the cure of disease.

The medical societies will shortly begin work for the winter. The Clinical Society met on October 3d. It is the largest medical society in the city and does excellent work. The Medical Association and the Medical and Surgical Society are somewhat smaller; the Academy of Medicine is a feeble but respectable relic of the past; the Obstetrical Society is composed of a very active body of workers; the Society of the Woman's Medical College has but a local interest; and, youngest of all, is the Johns Hopkins Hospital Society, which is composed of the hospital and dispensary staffs, and does work of a high order.

NEWS ITEMS.

The Act to Regulate the Practice of Medicine and Surgery in New Jersey.—The following is an abstract of the Act to Regulate the Practice of Medicine and Surgery in New Jersey, approved May 12, 1890:

1. The Governor shall appoint a State board of medical examiners, consisting of nine members, who

shall be persons of recognized professional ability and honor. The board shall be divided into three classes: the members of the first class holding office for one year, those of the second class for two years, those of the third class for three years. Further, the board shall be composed of five regular physicians, three homœopaths, and one eclectic, and no member shall be in any way connected with a medical college.

2. The board shall hold meetings for examinations at the capital, Trenton, on the second Thursday of January, April, July, and October of each year.

3. All persons commencing the practice of medicine or surgery in New Jersey shall apply to the board for a license; and such applicants shall be divided into three classes—first, those who have been graduated from a legally chartered medical school not less than five years prior to date of application for a license; second, all other graduates; third, medical students taking a regular course of medical instruction. Applicants of the first class shall submit to examination upon materia medica and therapeutics, obstetrics and gynæcology, practice of medicine, surgery, and surgical anatomy; those of the second and third classes, upon anatomy, physiology, chemistry, pathology, materia medica and therapeutics, histology, hygiene, practice of medicine, surgery, obstetrics, and gynæcology, diseases of the eye and ear, medical jurisprudence, and upon such other branches as the board may deem advisable. The questions for the examination of the first and second classes shall be the same in branches common to each class. The board shall not license applicants of the second and third classes after January 1, 1892, until satisfactory proof is furnished that the applicant has studied medicine and surgery for three years, is of good, moral character, and more than twenty-one years of age. Applicants of the third class, after they have studied medicine and surgery for at least two years, may be examined upon anatomy, physiology, chemistry, histology, pathology, materia medica and therapeutics; and if the examination is satisfactory the board may issue a certificate that the applicant has passed a final examination in these branches, and such certificate, if presented when making application for license to practise, shall be accepted in lieu of an examination in such branches.

4. All examinations shall be in writing, and the questions must be, except in materia medica and therapeutics, such as can be answered in common by all schools of practice. If the applicant intends to practise homœopathy or eclecticism, the members of the board of those schools shall examine the applicant in materia medica and therapeutics. The fee for examination shall be fifteen dollars for applicants of the first class and twenty dollars for those of the second and third classes.

5. The board may, by a unanimous vote, refuse to grant, or may revoke, a license for the following causes: persistent inebriety, the practice of criminal abortion, conviction of crime involving moral turpitude, or for publicly advertising special ability to treat or cure diseases which are considered incurable.

6. This act shall not apply to surgeons of the United States army, navy, or marine-hospital service, or to regularly licensed physicians or surgeons called from other States to attend cases in New Jersey, or to any person now entitled to practise in New Jersey.

7. Any person shall be regarded as practising medicine or surgery who shall append the letters M.D. or M.B. to his or her name, or prescribe any drug or other agency for the cure or relief of any injury or disease.

8. Any person commencing the practice of medicine or surgery in New Jersey contrary to the provisions of the act shall be deemed guilty of a misdemeanor, and, upon conviction, shall be punished by a fine of not less than fifty dollars or more than one hundred dollars, or by imprisonment for not less than ten or more than ninety days, or by both fine and imprisonment.

Rules for Conducting Examinations.—1. Each candidate shall present certificates of age, moral character, preliminary education, and time and place of medical studies.

2. All examinations shall be written with ink upon paper furnished by the secretary.

3. The examinations shall continue for two days, the sessions of the first day being from 9 A. M. until 1 P. M., from 2 until 6, and from 8 until 10 P. M.; those of the second day being the same, except that the evening session will be omitted. The final meeting, for the adjudication of the results, shall be held at 8 o'clock P. M. of the second day.

4. A general average of at least seventy-five per cent. shall be necessary in order to secure a license, provided that in no one branch the candidate receives an average of less than thirty-three and one-third per cent. In the latter case, should his total average in all the branches be over seventy-five per cent., the candidate may be immediately granted a second examination in the branch upon which he failed.

5. Each candidate shall sign a pledge that he has neither given nor received any information concerning the examination or used any unfair means. Any candidate found guilty of violating his pledge shall be rejected.

6. No fee will be returned to a candidate after he has commenced his examination. A rejected candidate may be reëxamined within one year without an additional fee.

Corrigendum.

THE PRODUCTION OF IMMUNITY FROM HOG-CHOLERA.

In the article on the production of immunity from hog-cholera (THE MEDICAL NEWS, October 4, 1890), the author would prefer Conclusion 3 to read as follows:

"The sucholotoxins and sucholo-albumins *should be* given in small doses *at intervals*. This, however, is not absolutely necessary, as the experiments show that the proper quantity of substance given at one time will also produce *immunity*, though not so satisfactorily as when the system is gradually accustomed to the poison."

OFFICIAL LIST OF CHANGES IN THE STATIONS AND DUTIES OF OFFICERS SERVING IN THE MEDICAL DEPARTMENT, U. S. ARMY, FROM SEPTEMBER 30 TO OCTOBER 6, 1890.

CRAMPTON, LOUIS W., *Captain and Assistant Surgeon* (Fort Sheridan, Illinois).—Is granted leave of absence for one month, to take effect about October 1, 1890.—Par. 2, *S. O. 80, Division of the Missouri*, September 30, 1890.

By direction of the Secretary of War, leave of absence granted JOHN L. PHILLIPS, *Captain and Assistant Surgeon*, in Special Orders No. 164, July 16, 1890, from this office, is extended two months.—Par. 3, *S. O. 228, A. G. O., Washington*, September 29, 1890.

PROMOTION.

MORRIS, EDWARD R., *Assistant Surgeon*.—On September 17, 1890, to be Assistant Surgeon with the rank of Captain, in accordance with the Act of June 23, 1874.